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THE HEADQUARTERS OF THE MINING INDUSTRY.

Visitors find here files of a great number of papers from the mining districts of this and other countries, and books of reference which can be consulted for information on any question in which they may be interested. They can have their letters addressed in care of "The Engineering and Mining Journal," P. O. Box 1833, New York, and will find in the headquarters every convenience for correspondence.

Another opportunity for our manufacturers will be offered by the industrial exposition which is to be held at Johannesburg in the Transvaal next year. It will open in April and continue for six weeks, and as Johannesburg is the center of the gold region which is now attracting universal attention, it will doubtless be very largely attended. Mining machinery and appliances will receive especial attention.

The extent to which immigrants from Southern and Eastern Europe have of late years replaced the Welshmen and Irishmen who not very long ago constituted the larger part of the working force of the anthracite coal mines of Pennsylvania, is shown by the statement that of 823 men who recently applied for miners' certificates in the second inspection district, 297 were natives of Poland, 150 were Hungarians and 115 Italians. The same change has taken place in the bituminous coal mines of Central Pennsylvania and in the Connellsville coke district. It is not a desirable one for many reasons.

Closely following the award of the Bessemer gold medal by the British Iron and Steel Institute to Mr. Henry M. Howe, comes the award to him, for his researches on the nature and properties of steel, of the Elliott Cresson gold medal by the Franklin Institute, the highest honor which that body has to bestow. The fact that, in thus honoring Mr. Howe, the Institute departs from its custom of awarding this medal for mechanical inventions, for which, indeed, it was more particularly intended, and gives it—we believe for the first time—for metallurgical investigations, certainly heightens the already great distinction which the bestowal of this medal implies.

The better utilization of the slack and culm arising from the working of the coal mines is a question which should receive careful attention. Two years ago the Pennsylvania Commission on Coal Waste reported that from the commencement of anthracite coal mining in Pennsylvania the coal and coal-dirt sent to the culm banks had been not less than 35 per cent of the total production of anthracite. Some attempts have been made at various times to reduce this enormous waste, one of the most hopeful of these efforts seems to be in the manufacture of artificial fuel or briquettes, which is a well-established and growing industry in France, Belgium and Germany, but has thus far taken little hold in this country though it is now being applied to the lignite coals in Texas. In Europe for many purposes—such as for use on locomotives, for stowing in ships' bunkers, and generally where much transportation and handling are needed—briquettes are preferred to lump coal. Besides utilizing the present waste or slack the manufacture permits the application of some inferior coals, which are too friable to stand handling and whose commercial value would be largely increased by putting them in the form of briquettes.

The article in another column giving a general sketch of the briquette industry as now caried on and of the various classes of machines generally used deserves careful reading. We believe that the manufacture can be made profitable in many places in this country, and a knowledge of the methods which have been successful elsewhere will be of service.

We have several times referred to the change in the conditions of mining in Cornwall, and the recent reorganization of the Dolcoath Company, with a view of working on modern lines. That something is needed to revive the industry in this ancient district is shown by the figures given in the returns for 1894. There were last year 56 tin mines reported, but most of them were small, and only seven produced over 500 tons of ore each during the year. The total yield of "black tin" was 12,910 tons; this was a reduction of 500 tons only from 1893, but there was a heavy decrease in the value reported, which was last year £37 15s. 3d. only a ton against an average price of £46 10s. 9d. in 1893. Some years ago it was estimated that tin mining in Cornwall was not profitable when black tin fell below £60 a ton; if those conditions still hold good, there must now be a heavy loss. The proverbial skill of the Cornish miner is coupled with a stubborn conservatism, and it is very difficult, apparently, for him to break away from the traditional methods—that is at home, for in this country and elsewhere Cornishmen have been numbered among the best of mine superintendents. In Cornwall the miners generally are contented with small returns, earning lower wages than their brethern in any other part of the United Kingdom.

Copper mining in Cornwall has almost disappeared. Thirty years ago

the production of copper ore and precipitate was over 200,000 tons yearly, but last year the total reported was 5,994 tons, the greater part of which came from a single mine, the Levant. The increasing exhaustion of the mines and the cheaper supplies of the metal from other countries are sufficient explanations of the change.

THE DUTIES OF DIRECTORS.

Some of our Boston contemporaries are waking up apparently to the fact that it is one of the first duties of directors to keep the stockholders advised of the condition and operations of their property. In the financial column of the Boston "Herald," of recent date, we find the following:

"It is in order to ask whether the Butte & Boston company will issue an annual report this year? It would seem to be time to make a beginning. Where are the governors of the Stock Exchange that they do not ask some of the blind pool companies, like Butte & Boston and Tamarack, Jr., to make annual statements of operations and financial standing."

It is to be hoped that others will ask and keep on asking these questions, not only of the companies named, but of many others whose operations are carefully covered up. Under our present system it is not always easy for an individual stockholder to raise the point with sufficient emphasis to secure a hearing. The authorities of the Stock Exchange, however, whose duty it is to protect the public which buys and sells stocks, should not neglect their duty, and all the "blind-pool" companies should be excluded from the lists. Action by the New York Stock Exchange resulted in bringing out reports of gross and net earnings monthly from many railroad companies which had persisted in refusing information; and the same body has succeeded in enforcing a great improvement in the matter of published reports. If the Exchange does not do its duty, the public should make itself heard in the matter and, if necessary, should force attention.

In one of Dickens' novels the serenity of a group of officials was seriously disturbed by the preposterous "fellow who wanted to know, you know." But the "fellow who wanted to know," and insisted on knowing was the means of breaking up some ancient and deep-rooted abuses. There is a wide field for him now in the investigation of company management. He will not be altogether popular among a certain class of directors and promoters, but if he is only active and numerous enough he will have the thanks of many present and future investors. If directors are once made to recognize the fact that investors are "fellows who want to know," and who will know or else refuse to invest, there will be no further trouble on this head. It is a safe rule for investors to keep out of all enterprises concerning the working and value of which the directors will give no information. It may always be assumed that where secrecy is practiced it is to hide something discreditable.

THE ADVANCE TOWARDS STEEL MAKING IN ALABAMA.

The importance of the step that has been taken by one of the large iron companies in Alabama towards furnishing the trade with pig iron suitable for the basic open-hearth furnace can not be over-estimated in its effect upon the manufacture of steel in the South. We are informed that large contracts have been made calling for pig iron with less than 1 per cent. of silicon, less than 0·05 per cent. of sulphur, and less than 0·8 per cent. of phosphorus. These requirements are being met regularly, the iron being subjected to close examination in the laboratory before shipment. So anxious are the producers of this grade of iron to meet the severe requirements of the market that every cast from the two furnaces now making it is examined for silicon, sulphur and phosphorus. At first the iron was cast in the ordinary way in sand, but at least one furnace is shipping chilled iron, and the other furnace is being equipped with the moulds necessary to permit all of its output to be chilled.

Aside from the mere production of basic open-hearth stock in Alabama on large orders, which indeed, had already been done on a somewhat smaller scale for the old Henderson Steel Company, for the Jefferson Steel Company and for the Fort Payne Company, the matter is of importance as exhibiting anew the adaptibility of the Alabama ores, fuels and fluxes for the production of steel. As early as 1888 Alabama pig iron was successfully converted into basic open-hearth steel by the Henderson Steel Company at North Birmingham and afterwards by the two other companies just named. The production of this kind of iron is not new in the Birmingham district and there are only two considerations that render this enterprise notable at the present time. These are, first, the production of the iron on a large scale and the close chemical inspection to which it is subjected, and, second, the willingness of large steel works to use it. The iron made for the Alabama steel companies several years ago was more or less in the nature of an experiment and it can not be said that the failure of the steel companies using it is chargeable to the iron. It is not our intention at this time to enter into a discussion of the causes of these failures; they were due to the conditions that existed at the time and to a lack of business management, conditioned, it is said, by a lack of means. Suffice it to say that the same kind of iron now furnished to some of the largest steel companies in the country was furnished to the Alabama companies several years ago. It is true that the orders then were small and that the total amount of such iron sold did not exceed 4,000 tons, but the steel made from it was of good quality.

The iron furnished then was mostly made from brown ore, but now it is being made chiefly of the soft and hard ores of Red Mountain, about 20 per cent. of brown ore being used.

In an address delivered before the Commercial Club of Birmingham, an abstract of which appeared in the "Engineering and Mining Journal" two years ago, Dr. William B. Phillips, the chemist of the Tennessee Coal, Iron and Railroad Company, took the position that if basic open-hearth stock could not be made from the Red Mountain ores, so cheaply mined and so accessible to all the local furnaces, it was idle to speak of steel making in Alabama. The establishment of steel works in Alabama depended upon the possibility of using the local ores, fuels and fluxes. It was this that enabled the Alabama furnaces to compete with other parts of the country in respect of the ordinary grades of iron, and it was this that would condition the making of steel. Up to that time the basic open-hearth stock made in the district had been made almost all, if not entirely, from brown ore, and his remarks were directed mainly to showing that the supply of this ore was not sufficient to enable any furnace to take large orders for the iron in question if it could be made only from brown ore or from mixtures in which this ore predominated. This was in 1893, but so rapidly do technical changes occur nowadays that we find large contracts made for the iron, and the iron itself made from Red Mountain ores.

The higher officials of the Tennessee Company, Messrs. Baxter, Shook, Bowron, McCormack and Haskell, were quick to appreciate the situation and it is to the results of their efforts that we must look for the solution of one of the main questions in connection with the steel problem in the South. This company has been subjected to a great deal of criticism, favorable and otherwise, but it can not be denied that it holds the key to the situation in coal and iron throughout the Southern industrial districts. It is the most powerful concern operating in Alabama and Tennessee, and very naturally there is a vast deal of speculation as to what it will do. What it has already done is to reduce the cost of making pig iron to a degree never anticipated in the history of the industry, and of late to demonstrate the possibility of making low silicon and low sulphur iron from the local ores on large orders. The company has been brought face to face with the question of establishing of steel works in Alabama as never before, and we shall be much surprised if it does not take up this question with progressive conservatism.

In the matter of steel it certainly has opportunities not possessed by any other Alabama company, but this is not all. The time has come for some of the large coal companies to undertake the utilization of the by-products from coke ovens. The manufacture of steel and the manufacture of gas should go hand in hand. The Cambria Company at Johnstown, Pa., is building by-product recovery ovens of the Otto-Hoffman type, and we recommend any iron company now making its own coke to look closely into the recovery oven and the influence it will have on the costs and profits of iron making. We have not doubted that steel would eventually be made in the South and the steps that have already been taken in the direction of suitable stock seem to us to be of the first importance.

We do not "boom" any company or any process, but speak of things as they present themselves to us. The steel situation in Alabama has undergone a very rapid and a very suggestive change, one that is reasonably sure of impressing itself upon a large part of the country before many years shall have passed.

NEW PUBLICATIONS.

Hidden Mines and How to Find Them. By W. Thomas Newman. Toronto, Ont.; M. Rogers Publishing Company. Pages 148; illustrated. Price, cloth, $1.50; leather, $2.

This little work, written with considerable care, and containing valuable advice, attempts as other predecessors of its kind have done, to cover too large a field in a small compass. It would have been better, perhaps, had the author confined himself to the greater amplification of Part VI., entitled "Practical pointers," as that is the position that best fills the description of the book as set forth on the title page, "Information called for by the ordinary business man who is interested for business purposes only." The task of condensing into a 16mo. book of 138 pages the necessary information so as to be of material value to the "business man, the investor, the ranger, the settler, and those generally, etc.," is well nigh impossible.

The work, although in as simple language as possible, still bristles with difficulties that no amount of study of the book itself will elucidate for any of the above-named class of readers. The division of the topics is good and distinct, the first being introductory, with practical remarks, the second dealing with rocks, their formation and how mineral deposits of commercial value occur in them, the third covering the means employed to determine the different ores and minerals, the fourth a description of each of the ores of the metals with a sketch of the treatment employed on a commercial scale, the fifth containing some information on non-metallic minerals, gems and precious stones, and sixth, most valuable and practical of all, some real good advice to prospectors and business men contemplating a mining investment or venture.

A table is given of elements with their symbols and atomic weights in Part III., which cannot fail to be confusing to many readers. For in-

stance, the atomic weight of gold is stated to be 196·7, and in Part IV. the gravity is stated to be 19·3; all this without sufficient explanation to enlighten most of the class of readers for whom the book is written.

There is a curious and misleading sentence with reference to prospecting for gold in Part IV. Starting in with the old saying that "Gold is where you find it," the writer goes on to say "No man may say it will not be found in a given locality, where the geological formations, subcrystalline slates and schists occur."

Now to the limitations of gold-bearing rock or formation inclosing a gold-bearing vein a prospector need absolutely pay no attention to the dictum laid down.

The author displays a wonderful ignorance of the metallurgy of gold in writing of the Carter-Walker process as a new one, and recording it as appearing for the first time last year, as the experiment was thoroughly threshed out and given every opportunity of being proved a practical success in 1882 at the Carter-Bancroft mill, Empire, Colo., since when it has been tried many times and is resurrected by the author and Col. Harvey Beckwith. It is also somewhat misleading to write that "lead ores, carrying silver, are treated by concentration and smelting, or smelting alone. Like nickel and copper the first product or matte is frequently sold to refiners." What on earth does this mean? Is it that anyone outside of a refiner would buy base bullion or matte, and does it also mean that the first product must be a matte? Then again, when we come to the definition of lignite, "like bituminous coal in appearance, but contains 15 to 20% of oxygen." Why not be accurate and more intelligible to the ordinary reader on a point like this which is just as likely to crop up as a matter of importance for a prospector as the discovery of a gold or silver mine? Why not say in plain language that lignite has usually 20 to 30% moisture, and is therefore, under ordinary conditions, a nearly worthless fuel, and to be accurate about oxygen (though this scarcely seems a point of great interest to business men or prospectors), it would just be as well to say that the range is at least from 11 to 26%?

In Part V., "Other Minerals of Commercial Value," we find "Peat" and "Mineral Wool," or "Silicate Cotton" as it is described, neither of which can be very correctly termed minerals. These two cases are, of course, an oversight on the part of the author, but such slips do not gain the confidence of the pupil searching for light.

The advice in Part VI. is good and practical, and should be an aid to a greenhorn who has never before embarked in prospecting or backing a mining venture. One very true remark with reference to examination of properties and giving of opinion as to treatment of ores is embodied in these words. "Every mining expert must have a knowledge of assaying; no chemist need have any knowledge of mining."

On page 103 the prospector is recommended to "try all the streams and gravel bars for stream tin," etc. This should have some little explanation for the poor prospector to be of value to him, as the only previous reference to tin in gravel is to the effect that "tin is also obtained from gravel, and is then called stream tin." Such a vague statement is worth nothing, and it does got even give the correct information that stream tin is, as a rule, the purest form of cassiterite, and of such gravity that it is as easily separated from ordinary gravel as a nugget of gold.

The advice as to conduct of mining enterprises is sound, and any one contemplating a mining venture or investment in mining stock would do well to read this last chapter of the book, take it to bed with him and think it over before laying out his money the next day.

Under the head of "Useful Tables," so far as blacksmithing is concerned, we should call the tables "useless" in place of "useful," for what is the use of instructing an ordinary, blacksmith tool sharpener or prospector to "cool down to 430° to 450°" when tempering drill steel, etc. Then again under the heading of "Approximate Cost of Mining and Treating Different Ores," one scarcely expects much intelligent or reliable information, but some of the figures are too inconsequent to be passed over, for instance, it takes $5 to $30 a ton smelting gold and silver ore, or possibly concentrates to matte, while a copper ore which is just as likely to carry gold and silver is only set down at $3 to $6 per ton. We would also be inclined to question the correctness of the drilling figures, as under conditions where a steam drill can be used the work performed by it rather exceeds anything that an air drill can do.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

The Silver Question. By J. G. Hertwig. Cincinnati, Ohio; published by the author. Pamphlet, pages 15. Price, 10c.

Report of the Director of the Imperial Mint for the year ending March 31st, 1895. Tokyo, Japan; printed by The Insetu Kyoku. Pamphlet, pages 37.

Missouri Geological Survey: A Dictionary of Altitudes of Missouri. By Curtis Fletcher Marbut. Jefferson City, Mo.; printed for the Survey. Pamphlet, pages 89.

Modern Copper Smelting. By Edward Dyer Peters, Jr. New York and London; The Scientific Publishing Co. Seventh Edition. Re-written and greatly enlarged. Profusely illustrated. Price, $5.

The Lead and Zinc Mining Industry of Southwest Missouri and Southeast Kansas. By John R. Holibaugh. New York and London; The Scientific Publishing Co. Pages 54; with map and illustrations. Price, 50c.

Co-operative Coal-mining in New Zealand.—The proprietors of the Mokihinui coal mines, near Wellington, have recently concluded an arrangement for the working of the mines on the co-operative principle. So far the experiment is proving satisfactory says the London "Colliery Guardian." A double line of tramway has been laid down, and an output of 600 tons per day will very soon be a regular average. Meanwhile further boring operations in the district are in progress, and seams of good hard coal 15 to 19 ft. in thickness are being found at an easy workable depth.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
Letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents.

Rubber Cement.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Can you or any of your readers favor me with a receipt for making a liquid cement, containing rubber, which will fasten rubber to wood? Also where caoutchouc oil can be bought? S. L.

MINNEAPOLIS, MINN., September 29, 1895.

The Santa Ysabel Mine.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Can you give me any information through your paper in regard to the Santa Ysabel mine? What will the ore average per ton? Has the mine ever been worked before; if so, at a profit or loss? Is the company's estimate ($4) for mining and milling too low? A. H.

LOWELL, Mass., Sept. 23, 1895.

[Can any of our readers answer these questions?—ED. "E. & M. J."]

The Phœnix Gold Mining Company of Arizona.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Some time has elapsed since anything has been heard of the Phœnix Gold Mining Company of New York and Arizona. At intervals since 1889 this concern has seemed to be on the eve of accomplishing something. After one or two failures, probably due largely to want of proper management, a large and expensive plant was erected, and in 1893 an assessment of 20c. per share was made and the company was reorganized. There was promise of better things, and then came silence. The earlier history of this mine was decidedly interesting; would not some inquiry and a description of the present state of affairs be timely? P. R.

NEW YORK, Sept. 9, 1895.

A Warning.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I notice that your special correspondent mentions as being in the Atlanta exhibit gold-bearing quartz from a tract owned by C. H. Stewart and G. Bonner, containing some 1,400 acres in Carroll County, Georgia. As an effort will doubtless be made to sell this property to some innocent purchaser, it might interest someone to know that two samples taken on a general average of the deposits, one by a friend of mine and one by myself, averaged respectively $22.70 and $14.95 per ton; that on the strength of these a payment on account of purchase of the tract was made and two experts sent to make a thorough examination with two assistants. The result was that they found out of 25 samples a milling average of less than $1 per ton, and no ore could be found on the property that analyzed over $3.50 per ton. This was the result of a very recent examination and a request for a return of the money paid on account of purchase met with no response. TENDERFOOT.

BOSTON, October 1st, 1895.

THE ATLANTA MEETING OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.

Reported for the Engineering and Mining Journal by our Special Correspondent.

The Special Correspondent of the "Engineering and Mining Journal," representing the Local Committee of Arrangements, went to Gainesville on Tuesday morning, October 8th, and met the special train placed at the disposal of the members of the Institute by the Southern Railway Company. The following is a list of the members and ladies who compose the party from Washington to Atlanta: W. H. Adams, Mrs. Adams, Miss Adams, Miss Hall, of Mineral City, Va.; Mr. James Archbald, Miss Archbald, Mrs. Archbald, of Scranton, Pa.; Henry Belin, Jr., Miss Belin, of Scranton, Pa.; L. C. Bierwith, Mrs. Bierwith, of Dover, N. J.; George H. Billings, of Boston, Mass.; R. M. Blankenship, Mrs. Blankenship, of Richmond, Va.; Torbert Corvell, of Lambertville, N. J.; W. F. Downs, Mrs. Downs, of Jersey City, N. J.; Arthur Cooper, of Middlesboro, England; J. W. Fuller, of Catasauqua, Pa.; Levi Holbrook, Mrs. Holbrook, of New York city; Joseph T. Hilles, J. E. Johnson, Jr., of Pottstown, Pa.; W. S. Hungerford, of Jersey City, N. J.; Horace Field, Mrs. Field, of Wellsboro, Pa.; E. S. Jones, of Olyphant, Pa.; Washington Jones, Mr. and Mrs. Ferguson, of Philadelphia; C. Kirchhoff, of New York City; C. Le Boutilher, Mrs. Le Boutilher, of High Bridge, N. J.; J. H. Lee, Mr. Lee, of Baltimore, Md.; Charles McCreary, of Dunbar, Pa.; S. F. Morris, Eckman, W. Va.; Paul A. Oliver, Mrs. Oliver, of Oliver Mills, Pa.; George S. Page, Mrs. Page, of Pittsburg, Pa.; W. G. Parke, Miss Parke, of Scranton, Pa.; E. W. Parker, Mrs. Parker, Miss Brian, of Washington City; Leonard Peckett, of Catasauqua, Pa.; S. M. Pitman, Mrs. Pitnam, of Providence, R. I.; F. E. Platt, Mrs. Platt, of Scranton, Pa.; Joseph C. Platt, Mrs. Platt, of Scranton, Pa.; Theo. D. Rand, Miss Rand, of Philadelphia; R. W. Raymond, Mrs. Raymond, W. M. Rexford, New York City; Mrs. E. H. Richards, Boston, Mass.; Cyrus Robinson, of Columbus, O.; Horace See, Mrs. See, of New York City; W. L. Sheafer, Mrs. Sheafer, A. W. Sheafer, of Pottsville, Pa.; C. D. Simpson, Mrs. Simpson, of Scranton, Pa.; J. William Smith, of Bridgeton, N. J.; W. T. Smith, of Scranton, Pa.; H. G. Torrey, Mrs. Torrey, Gray Torrey, of New York City; John P. Wanner, of Johnstown, Pa.; Joseph D. Weeks, of Pittsburg, Pa.; Walter Wood, of Philadelphia; David T. Day and B. E. Fernow, of Washington, D. C.

All the arrangements of the trip from Washington to Atlanta were under the care of Mr. E. W. Parker, of Washington. The entire party were as a unit in their appreciation and thanks for the manner in which he performed his self-imposed duties. The schedule arranged for the running time of the train had been followed so closely that despite the fact of some hot boxes, and that breakfast had to be taken in two sections, the party arrived in Atlanta at 1:50 p. m. as scheduled. The members were welcomed at the depot by the following members of the local

committee: W. S. Yeates, chairman; W. H. Emerson, secretary: G. C. Hewett and William M. Brewer, who escorted them to the hotels, where accommodations had been secured. Dr. R. W. Raymond and several others went to the Hotel Aragon, where headquarters had been established for the accommodation of the members during the meeting. The program as arranged by Dr. Raymond and the local committee, provided for a visit to the Exposition grounds in the afternoon, and at 8 o'clock in the evening the opening session was held at Concordia Hall, followed by an informal reception. Mr. W. S. Yeates, state geologist of Georgia and chairman of the local committee, called the body to order and in behalf of the committee welcomed the Institute to Atlanta in its autumn session.

"We have a body," he said, "whose business it is to study the development of the mineral and geological resources not only of the South and North but the entire country. It gives us great pleasure to have so distinguished a body meet with us. It is your first meeting here and the citizens are glad of an opportunity to extend you all the courtesies in their power." He then introduced as a representative of the city and Exposition, Mr. Alex Smith, general manager of the Exposition, who welcomed the Institute in the following happy manner; he said: "I am overwhelmed with the myriad details that devolve upon me as an officer of the Exposition, and had but an hour's notice to report here for duty to represent President Collier, who was called on to speak at the Costa Rica Building. I find I must represent the Governor and Mayor, too. But no matter, because in representing the Exposition, which is bigger than the State of Georgia, and owns Atlanta, I am able to bid you all a hearty welcome on behalf of the Exposition, the State and the city. I have been engaged in the Exposition work for 18 months, but so busily that I have not yet had a chance to see for myself the results of our labors. I am informed, however, that we have one of the biggest shows that you ever saw. Not as big as Chicago's, but prettier. God in his works of nature has been kind, and the panorama of beauty in art and nature spreads out before you in all of its sublimity. You scientific men will find some things here in the mining and forestry displays that you never saw before. They are full and comprehensive exhibits of the mineral resources of the entire South. The Government is behind the displays, and I have never known the Government to fail. It is for you to develop the richest mineral country in the world—the South. The auditorium at the Exposition is under my charge and I officially tender it to you to hold your sessions in if you desire. We are glad and delighted to see you and welcome you to our State, our City and our Exposition."

Dr. I. M. Hopkins, president of the Technological School in Atlanta, was then introduced and said: "It is with embarrassment yet profound pleasure I respond to the call made upon me. I am not surprised at the absence of the potentates; like me, possibly, they are abashed in this presence. When I speak of engineers I think of a multitude of them—as men of spades, picks, drills and dynamite, by which you dip deep down to reveal to men nature. I think of figures and their wide domain in mathematics. Then there looms up to me the dream of my boyhood as I stood aghast before those men who do and say and work out such grand results. As a representative of the educational department of the State, and of the Technological School in Atlanta, I greet you members of the Institute and extend you a hearty welcome."

Mr. Yeates, in behalf of the local committee, assured the visitors that if anything could be done to add to their pleasure and comfort, all they had to do was to hint it to a member of the committee, and their wishes would be considered as commands and promptly obeyed. Mr. Yeates then introduced the President of the Institute, Mr. Joseph D. Weeks, of Pittsburg, Pa., who took the chair. President Weeks' response to the welcomes extended by the earlier speakers is in brief as follows: "I assure you that we are more than glad to have what you have given us. We appreciate a welcome from one who is not only an educator but a teacher—one who leads men out into the paths of religion and learning. If the Exposition is greater than the State, the city and their chief officers, it must be a big thing. But I am of opinion that without the brain, the courage, the nerve of the citizens of Atlanta and their officers the Exposition could not be what it is. I had heard of Atlanta years ago—how it was fire-swept, stormed by war—blotted out; then of its resurrection and great progress. It is now the greatest city in the South—strong, plucky and energetic. Its rapid rise to greatness without the natural resources of iron and coal has been marvelous. It takes men of pluck and nerve and energy to build such a city. If this Exposition had been put down near some other cities, it would not be what it is. The pluck, energy, push and industry of Atlanta's men are greater than the Exposition or the city. We assure you we are delighted to be welcomed by such men. It stirs our hearts, our energies. We thank you for your kind courtesies." President Weeks then proceeded to read his address on "Some Fuel Problems."

At the conclusion of the address by the president, Dr. Rossiter W. Raymond read by title his papers "Biographical Notice of Franz Posepny" and "Biographica Notice of Eckley B. Coxe."

These were followed by some discussion relative to an invitation extended to the members and guests to make a trip to Birmingham, Ala., and vicinity in lieu of the trip to the marble quarries in Pickens County, North Georgia. It was not decided, however, whether this invitation would be accepted. The session was then adjourned until 10 o'clock on Wednesday morning, October 9th.

WEDNESDAY SESSIONS.

The Institute was called to order at 10 a. m. in the lecture room at the Aragon Hotel. Secretary R. W. Raymond read the following list of newly elected members: William Spencer Hutchinson, Galt, Cal.; Albert Huessener, Westfalen, Germany; George H. Hooper, Hague, N. Y.; Frederic Hall Harvey, Galt, Cal.; B. M. Hall, Atlanta, Ga.; J. Ralph Finlay, Virginia, Minn.; David Evans, Middlesboro, England; Walter Nathan Crafts, Troy, N. Y.; Geo. H. Clark, Cedartown, Ga.; Raymond B. Brown, Allegheny, Pa.; Horace F. Brown, Chicago, Ill.; Joseph Troy Johnson, Longdale, Va.; Charles B. Kingston, Aspen, Colo.; A. B. Litchfield, Rico, Colo.; Harry Huntington Miller, New York, N. Y.; John B. Piggott, Bessemer, Mich.; Frederic Powell, Charlotte, N. C.; N. P. Pratt, Atlanta, Ga.; Charles Henry Guerean, Portsmouth, Va.; T. H. Seamon, Potosi, Mexico; L. M. Shanahan, Low Moor, Va.; Robert Chester Turner, Bodie, Cal.; Robert B. Turner, Butte, Mon.; Samuel Herbert Williams, Butte, Mon.; W. L. Kann, Pittsburg, Pa.; Thomas G. McKell, Chillicothe; Randolph Stolnaker, Wheeling, W. Va.; Joel F. Vaile, Denver, Col.; Thomas Johnson Britten, Johannesburg, South Africa; Samuel W. McCallie, Atlanta, Ga.; Charles L. Patterson, Chicago, Ill.; John M. McCandless, Atlanta, Ga.; Robert Swain Perry, Cave Springs, Ga.

The Secretary also gave notice of several proposed amendments to the rules which he stated would be published with the proceedings, discussed and acted on at the next annual meeting.

The following papers were read by abstract: "The Present Development of Gold Mining in the Southern Appallachian States," by H. B. C. Nitze and H. A. J. Wilkins, Baltimore, Md.; "The Gold Regions of Georgia and Alabama," by William M. Brewer, Atlanta. On the conclusion of the reading of these papers they were discussed at considerable length by Prof. A. Theis, of Haile, S. C., Dr. W. Raymond and Dr. William B. Phillips, of Birmingham, Ala. Following this Dr. Raymond read by abstract a paper by R. W. Leonard, Kingston, Ontario, Canada, on "The Assay of Auriferous Ores and Gravels by Amalgamation and the Blow Pipe;" also a paper entitled "Mining Titles on Spanish Grants in the United States: An Object Lesson in Mining Law," written by himself. "The Mineral Resources of Northern Georgia and Western North Carolina," by W. P. Blake, New Haven, Conn., was read at length by the secretary in the absence of Professor Blake. At the conclusion of these papers the Institute adjourned until 2 p. m.

President Weeks called the Institute to order promptly at that hour. The afternoon was consumed by the reading by abstract of the following papers: "The Magnetization and Concentration of Iron Ores," by William B. Phillips, Birmingham, Ala.; "Southern Magnetites and Magnetic Concentration," by Harvey S. Chase, New York City: "Southern Pyrites," by W. H. Adams, New York; "Kaolins and Clays of South Appalachian Region" and "Underground Currents of Drinking Water," by A. J. Holmes, N. C.; "The Magnetic Separation of Iron Ore," by C. M. Ball, Saratoga Springs; "The Theory and Practice of Ore Sampling," by D. W. Brunton, Aspen, Colo.; "Notes on Certain Water-Worn Specimens," by F. C. Holman, San Francisco, Cal. These papers were discussed at some length by Messrs. H. A. J. Wilkins, R. W. Raymond and W. H. Adams. The paper on "Steel Rail Specifications," by R. W. Hunt, Chicago, Ill., was read at length. Dr. Raymond made some interesting remarks on "Louisiana Sulphur," and the probable success of experiments, which have recently been adopted, of forcing the sulphur to the surface in its pure state. He referred, at some length, to the methods which had been adopted in the past in the effort to sink a shaft through the quicksand formation of 264 ft., which overlies the bed of sulphur, and read a telegram from the superintendent of the company, stating that they were at the present time successfully pumping sulphur to the surface. At the conclusion of these remarks, the authors of the following named papers, being absent from the meeting, the same were read by title, by the secretary: "The Geology of Northern Georgia and Alabama," by C. Willard Hayes, Washington, D. C.; the "Monazite Deposits of North and South Carolina," by C. A. Metzger, of Shelby, N. C.; "A Section of Rich Patch Mountain at Iron Gate, Va.," by E. J. Schmitz, New York City; "The Phosphates and Marls of Alabama," by Eugene A. Smith, State Geologist, University of Alabama; "Precious Stones of the South," by George F. Kunz, New York; "Chrome Ores in the Southern Appalachian Region," by Wm. Glenn, Baltimore, Md.; "The Eastern Coal Regions of Kentucky," by Graham McFarlane, Louisville, Ky.; "The Utilization of the Southern Iron Ores in the Blast Furnace," by Jno. Birkinbine, Philadelphia, Pa.; "Onyx Marbles," by Courtney DeKalb, Raleigh, Mo.; "Folds and Faults in Pennsylvania Anthracite Beds," by Benjamin Smith Lyman, Philadelphia, Pa.; "The Geological Structure of the Western Park of the Vermilion Range of Minnesota," by H. L. Smythe, Cambridge, Mass., and J. R. Finley, Virginia, Minn.; "A Comparison of Recent Phosphorus Determinations in Steel," by George E. Thackray, Johnstown, Pa.; "The Determination of Graphite in Pig Iron," by Porter W. Shimer, Eastern, Pa.: "The Assay of Silver Sulphides," by Howard Van F. Furman, Denver, Col.; "The Effect of Washing with Water upon the Silver Chloride in Roasted Ores," by Willard S. Moss, Prescott, Ari.; "Stamp Milling in the Black Hills, South Dakota and at Grass Valley, Cal.," by T. A. Rickard, Denver, Colo.; "The Cycle of the Plunger Jig," by Robert H. Richards, Boston, Mass.; "The Form of Fissure Walls as Affected by Sub-fissuring and by the Flow of Rock," by Wm. Glenn, Baltimore, Md.

At the conclusion of these proceedings, Dr. David T. Day, in a neatly turned speech, presented to President Weeks, one of the first of 200 souvenir medals, struck off by the Government mint at the Exposition grounds, to complete the badge used at the meeting, and informed the members that the remainder of the medals which the local committee had been unable to obtain previous to their arrival in the city, were ready for distribution.

During the afternoon session, the secretary called attention to invitations from the Chamber of Commerce, of Nashville, and the directors of the Tennessee Centennial Exposition, extended to the Institute, to hold its next meeting in that city. The following named members registered at headquarters, during the meeting:

A. M. Curtis, Detroit, Mich.; J. Lodge, South Pittsburg, Tenn.; Paul A. Oliver, Wilkes-Barre, Pa.; Leonard Pickett, Catasauqua, Pa.; Wm. B. Phillips, Birmingham, Ala.; Horace Lee, New York; G. C. Hewett, Atlanta, Ga.; L. Holbrook, New York; Wm. G. Parker, Scranton, Pa.; C. B. Simpson, Scranton, Pa.; J. A. Holmes, Chappel Hill, N. C.; Jos. C. Platt, Waterford, N. Y.; Wm. H. Adams, Mineral City, Va.; James Archbald, Scranton, Pa.; W. M. Rixford, New York; H. McCormick, jr., Harrisburg, Pa.; Wm. T. Smith, Scranton, Pa.; H. H. Miller, New York; J. Harry Lee, Baltimore, Md.; Chas. Carroll, Baltimore, Md.; W. R. Crandall, Dahlonega, Ga.; J. S. Roberson, Pittsburg, Va.; T. D. Rand, Philadelphia; C. P. Perin, Birmingham, Ala.; C. R. Boyd, Wytheville, Va.; A. W. Shaefer, Pottsville, Pa.; W. S. Hungerford, Jersey City, N. J.; Henry Berlin, Jr., Scranton, Pa., B. E. Fernow, Washington, D. C.; R. M. Blankinship, Richmond, Va., W. J. Keep, Detroit, Mich.; J. W. Fuller, Catasauqua, Pa.; Jos. D. Weeks, Pittsburg, Pa.; A. B. Bellinger, Syracuse, N. Y.; A. M. Shook, Tracey City, Ala.; Harry S. Chase, New York City, E. P. Wiles, Wheeling, W. Va.; A. Thies, Haile Mines, S. C.; J. F. Lewis, Chicago, Ill.; Jno. Lilly, Lambertville, N. J.; Wm. Lilly, Lambertville, N. J.; F. K. Copeland, Chicago, Ill.; H. B. Chrodtrausen, Hermitage, Ga.; Dr. E. W. Clossen, Lambertville, N. J.; Chas. McCaury,

Dunbar, Pa.; Wm. M. Brewer, Atlanta, Ga.; C. Kirchhoff, New York: F. E. Piatt, Scranton, Pa.: R. W. Menich, Chicago, Ill.: S. F. Morris, Eckman, W. Va.; G. H. Billings, Boston, Mass.; L. C. Bierwith, Dover, N. J.; H. B. C. Nitze, Baltimore, Md.; H. A. J. Wilkins, Baltimore, Md.; O. Smith, Bridgeton, N. J.; Jno. P. Warner, Johnstown, Pa.; Wm. Kent, Passaic, N. J.; Jos. T. Hills, Pottstown, Pa.; Lucas P. Brown, Nashville, Tenn.; Washington Jones, Philadelphia, Pa.; J. E. Johnson, Jr. Longdale, Va.; Clemons Butillier, High Bridge, N. J.; W. S. Yates.; W. F. Downs, Jersey City, N. J.; H. G. Torrey, New York; G. Torrey, New York; H. Dailey, Brooklyn, N. Y.; G. S. Page, Pittsburg, Pa.; Wm. Smith, Syracuse, N. Y.; W. Y. Westervelt, Ducktown, Tenn.; W. H. Bradley, Mingo Junction, O.; Wm. H. Case, Charlotte, N. C.; E. W. Parker, Washington, D. C.; Stephen Minot Pittman, New York; Wm. H. Bowron, South Pittsburg, Tenn.; Miss Ellen H. Richards, Boston, Mass.; R. S. Perry, Cave Spring, Ga.; Adolph Theis, Halle, S. Carolina.; E. M. Shoup, Nashville, Tenn.; H. S. Fleming, New York; David Evans, Middlesboro, England; John M. McCandless, Atlanta; C. W. Hayes, Washington, D. C.

Thursday, October 10th, was Engineers' Day at the Cotton States and International Exposition, when the members of the Institute visited the grounds during the day, and at 8 p. m. were invited to a reception by Dr. and Mrs. Day, and Dr. and Mrs. Fernow at the Forestry and Mining Building. Friday, October 11th, was devoted to visiting the granite quarries at Stone Mountain, where the Venable Brothers entertained the members and guests with an old-fashioned Georgia barbecue. Friday night the party divided, one portion going to Birmingham by the Louisville & Nashville Railroad to visit the blast furnaces and coal mines, while the other portion carried out the programme, as arranged by the local committee and visited the marble quarries in Pickens County, North Georgia.

In the following columns we give abstracts of a number of the papers presented at the meeting.

A SECTION OF RICH PATCH MOUNTAIN AT IRON GATE, VA.

BY E. J. SCHMITZ.

This paper gives a diagram and description of a section through the Rich Patch Mountain obtained during an examination of the iron ore resources of the neighborhood. Full notes and measurements are given. The geological members below the Oriskany and Lower Helderberg are exposed along the gap in a beautiful arch, while the higher formations appear in a more or less disturbed state on both sides of this arch, and are partly covered by debris.

THE MAGNETIC SEPARATION OF IRON ORE.

BY CLINTON M. BALL.

After some consideration of the general conditions for magnetic separation this paper describes the Ball-Norton electro-magnetic separator, and then goes on to describe a number of the plants built and experiments made in this class of work, especially those at the Benson mines in St. Lawrence County, N. Y., at the Jayville mine in the same district, and at Mineville in Essex County, N. Y., where Witherbee, Sherman & Co., carried out a series of expensive experiments. The importance of these may be judged by the fact noted in the paper that at a moderate estimate, the ore crushing capacity of existing plants located in the Adirondack region of New York and in New Jersey and Pennsylvania, is sufficient to make more than 1,000,000 tons of high-grade concentrates per annum.

THE FLORIDA PEBBLE-PHOSPHATES.

BY E. W. CODINGTON.

In this paper the author outlines the district in which the pebble-phosphates occur, which in a general way is bounded by Peace River and the Gulf of Mexico. He describes also the different methods of mining, removing the overburden and the phosphate conglomerate, and the appliances for drying rock and preparing it for market. The deposits are estimated to cover an area of about 5,000 acres. The territory worked is limited by several considerations, such as the amount of carrying charges, the depth of the overburden which must be removed, etc. Under existing conditions, and always assuming the use of the best mechanical appliances, a workable deposit must fill approximately the following specifications: On the basis of a phosphate-stratum of 12 ft. in depth, averaging 600 lbs. of dried pebble to the cubic yard of mass, the overburden should not exceed 3 ft. if it contain sand conglomerate, or 12 ft. if free from the conglomerate. The rock should not run below 65% phosphate of lime in cargo samples, nor above 3% combined oxide of iron and alumina; and the location should be such as to present no special mining difficulties.

SOUTHERN MAGNETITES AND MAGNETIC SEPARATION.

BY HARVEY S. CHASE.

This paper describes experiments carried on in magnetic separation at the Cranberry mines in Mitchell County, N. C., with results believed to be encouraging, although they have been suspended for a time on account of unfavorable conditions in business. The recent revival in the iron trade, however, may cause a renewal. The paper is accompanied by a table giving analyses of a number of magnetic ores from North Carolina and Tennessee. It says, in conclusion, that the problem presented by these ores, already Bessemer, with only silica to contend with, is very different from that of many Eastern ores carrying apatite or pyrite. The low percentage of iron and the large percentage of silica render the Southern magnetites costly to crush; but it is fortunately not necessary to crush fine in order to eliminate sufficient of the silica to make the product marketable locally under normal conditions and prices. From these experiments two apparent conclusions may be drawn: 1. That emphasis should be laid upon careful washing, screening and sizing rather than upon fine crushing. 2. That each size of material should be concentrated separately upon suitable magnetic separators, giving as a total result a Bessemer concentrate averaging from 50 to 60% of iron and of a size sufficiently coarse for furnace-burden without other mixing.

A COMPARISON OF RECENT DETERMINATIONS OF PHOSPHORUS IN STEEL.

BY GEORGE E. THACKRAY.

The writer describes the case of a special lot of steel made by the Cambria Iron Company for structural work, subject to inspection and test, one of the requirements being that the material should not exceed 0·08% in phosphorus. Preliminary determinations were made in the sample ingots from each heat, and these showed that almost every heat was within the prescribed limit of phosphorus. After the material had been rolled sample drillings were taken in the regular manner in use at the works, and these samples were mixed and divided into two parts, one being analyzed at the works, and the other sent to the inspectors. Several hundred determinations were made without reaching an agreement between the work of the inspectors' chemist and that of the works' chemist, the results showing a startling discrepancy. After some discussion it was agreed to submit the samples to a third firm of chemists, who in turn found results differing generally from each of the others. The material was finally accepted. This lead to an examination and comparison into the work of different chemists in these determinations. The paper gives a description of 26 different methods used in different cases in determining phosphorus, the object being to call attention to the different methods and also to the general accuracy of such work as done at the present.

THE EASTERN COAL REGIONS OF KENTUCKY.

BY GRAHAM MACFARLANE.

The eastern coal-field of Kentucky covers about 11,000 square miles in all. On the east and south it extends to the State lines of West Virginia, Virginia and Tennessee. Its western boundary may be roughly described as an irregular line beginning at the Ohio River in Greenup County, thence through the counties of Carter, Menifee, Wolfe, Estill, Jackson, Rockcastle, Pulaski and Wayne, to the Tennessee line.

The changes in the rock intervals and in the coal seams from the northeastern end of the field to the south and southwestern end are so great that no satisfactory identification of the coals has yet been made, and the correlation of the Kentucky coals with those of other States in the Appalachian coal-field is likewise involved in a conflict of opinion. The longer the matter is studied, the more confusing it becomes. The first examination of this field leads to much more satisfactory conclusions than can be accepted after more thorough investigation; and the identification of the various coal seams, supposed to be established 40 years ago, is now doubtful. The paper is confined to the description of the various mining operations, with some information as to the territory adjacent to, or tributary to, developed sections, using generally local or Kentucky nomenclature; and it gives also some observations on the stratigraphy and correlation of the coal seams, which may be useful in stimulating study by geologists.

THE FORM OF FISSURE-WALLS, AS AFFECTED BY SUB-FISSURING, AND BY THE FLOW OF ROCKS.

BY WILLIAM GLENN.

The writer describes the Ritchie vein in Ritchie County, W. Va., which is a straight fissure about 3,600 ft. in length cutting vertically downward across the horizontal beds of shale and sandstone to the depth not ascertained. The geological horizon is that of the upper barren coal measures of the Appalachian coal field. The vein matter was at first declared to be a form of asphalt, and was called grahamite by Professor Wurtz. The Ritchie mine has been worked out exposing the walls over a large area. The only similar occurrence known to the writer is that of the Albert mine in New Brunswick, which has also been exhausted and abandoned, and which contained a very pure asphalt. Considering all the conditions, the writer offers a number of hypotheses as to the formation of these veins. These are: 1. That the vein was a result of slowly augmented strains which at last produced rupture. 2. The resulting fissures slowly increased in width and length until the rupturing stress no longer existed in the rocks. 3. The flow has been least in the obdurate strata, and greatest in the most yielding ones. 4. The rupturing force shattered the rocks along and near the potential surfaces of rupture. 5. Where the fissure-walls were sandstone, these detached masses were comparatively broad and thin. 6. Because of the homogeneous quality and rigid character of sandstone, such strata pulled asunder promptly with but little shattering along the coming surface of fracture. 7. The shale strata at Ritchie were protected by the sandstones above and below each of them. 8. The pressure, which observers declare to have existed upon the vein-matter, grew out of the flow of the rocks. 9. From the formation of the Ritchie vein to the injection of its enclosed matter, the time which elapsed was considerable.

FOLDS AND FAULTS IN PENNSYLVANIA ANTHRACITE BEDS.

BY BENJAMIN SMITH LYMAN.

This paper is chiefly valuable for its illustrations, which include 38 plates, containing 177 sections prepared from the cross-section sheets of the Pennsylvania Geological Survey, accompanied by a key map showing where the sections were made. They are drawn with equal horizontal and vertical scales and are consequently not misleading to the eye, and include a large number of very interesting views. The paper says that an inspection will show that the supposed law of the northwesterly dips are steeper than the southwesterly dips is not by any means universal. The conclusions drawn by the writer from a careful examination of these cross sections and of the faults arising from the folding of beds are that steep northerly dips in the Pennsylvania anthracite region are much less prevalent than was formerly supposed; that nearly half the basins and saddles are about symmetrical, and that nearly three-quarters of the subordinate ones are so in the Western Middle field, but that less than a quarter of the main ones are so in the Southern field. Again, that the subordinate folds throughout the region are confined to subordinate groups of beds of inferior firmness, and are not parallel to the main folds, but probably of uniform profile distances from the main axes, so as to descend the flank of a sinking anticlinal. Further, that the faults are almost invariably longitudinal or reversed faults, occasioned by the overstraining of subordinate folds, and corresponding in three-fourths of the cases to an overturned southerly dip, with the upthrow to the south; that such broken subordinate folds, whether dipping southerly or northerly, ride in equal number on the northerly dipping and southerly dipping

sides of the main folds; that the stratigraphic throw averages only about 62 ft. and never exceeds 160 ft., and that the displacement averages 72 ft. and never exceeds 240 ft.

THE DETERMINATION OF GRAPHITE IN PIG IRON.

BY P. W. SHIMER.

The object of this paper is to call attention to the source of error in the determination of graphitic carbon made by the usual method of solution in hydrochloric acid. This generally gives higher results than solution in nitric acid, and many therefore consider it more trustworthy. The point urged by the paper is that the high results obtained by this method are due to the presence in the graphitic residue of titanium carbide and possibly of insoluble carbides, the carbon of which is included in the graphite in the final determination. In the nitric acid method the titanium carbide is easily dissolved. The method by solution in dilute sulphuric acid is open to the same objection as that by hydrochloric acid, since titanium carbide is insoluble in sulphuric acid, and, moreover, it is not attacked by hydrochloric acid or by a boiling solution of caustic potassa.

The paper gives several analyses of iron and examples of determination of graphite. The writer says that he has never encountered a pig iron free from titanium, the amount varying usually from 0·5% to 0·40%. In these cases the graphite determined by the ordinary process will be from 0·13% to 0·100% too high, while the combined carbon will be correspondingly low. It is believed that more light would be thrown upon the condition of the carbon in pig iron by making three determinations: One of total carbon, one of the carbon insoluble in hydrochloric acid, and one of graphite by the nitric acid method. It is important to know how the carbon is combined since while 0·1% of carbon combined with titanium in disseminated microscopic crystals possible has no effect on the hardness of the iron, while the same amount of carbon combined with iron and manganese would have an appreciable hardening effect. It is essential to know by what methods graphite has been determined in order to draw conclusions from the determinations.

REVISED ALTITUDES IN MISSOURI.

Written for the Engineering and Mining Journal by Charles R. Keyes.

When the Missouri Geological Survey first began its detailed topographic mappings a few years ago, it was confronted by the serious obstacle of insufficient and unreliable data for vertical control. To be sure, lines of railroad passed through different parts of the State, but their level readings were not checked in any way, so that only approximate accuracy could be secured in reckoning from sea-level the elevation of the stations.

In districts in which mapping was commenced datum points were established in the several areas. In the meanwhile the collection of data was begun for determining accurately the altitudes of all parts of the State, so that when mapping would be started in any particular region the work could be taken up without a special effort to fix the datum line for that area. Moreover, it was considered that when such work was done it would be available for countless other purposes in geological investigation. It was found of great importance to have the zones of equal altitude more than approximately determined, and very convenient to have all elevations referable directly to mean tide.

The fundamental necessity of the work is readily recognized whenever accurate topographical mapping immediately precedes or accompanies the tracing and investigation of the various rock formations. Usually railroad levels are depended upon almost entirely for the principal elevations of the different parts of a State and they are made to serve for subsequent determinations of altitudes by barometrical means. Unless carefully checked, however, railroad levels are sufficiently unreliable to render untrustworthy all attempts to establish a satisfactory foundation for topographic maps and they give rise to very erroneous results in calculations involving the elevation of particular places. Hence the figures from this source, which are liable to vary several feet in either direction, usually cannot be depended upon implicitly. If adopted before this final revision, not only are the results seriously affected, but in many cases are practically rendered nugatory, as is subsequently shown by lines of levels more carefully run.

To relieve this uncertainty concerning the vertical position of the starting points in the various districts of Missouri, the profiles of the railroads traversing the State and the lists of elevations of all stations on them were collected. Within the past year the recalculation of the altitudes of all places, their adjustment to a common datum, the St. Louis directrix, and their reduction to mean tide level has been finished. The main portion of the revision has been done by Prof. C. F. Marbut, of the Missouri State University, who for several years has been in charge of the topographical and physiographical work of the Survey. An essential aid to the adjustment has been the several lines of precise levels which have been run under Federal auspices. Missouri has been especially favored in this respect. The Mississippi River Commission has established a line along the entire Eastern border of the State. This is a part of the series started from Biloxi on the Gulf of Mexico and carried up the great river. The Missouri River Commission, starting at the mouth of the Missouri with one of the bench marks of the organization just mentioned, has carried a line of levels across the State to Kansas City, thence northward along the western boundary. The Coast and Geodetic Survey has also run a line of precise levels, as a part of its transcontinental work, along the Missouri Pacific Railway from St. Louis to Kansas City; and also from the latter point southward near the western boundary into Arkansas. Where the lines of railroad intersect those of the precise levels there is afforded an accurate means for the correction of the errors which existed in the elevation figures of the former.

With the completion of this revision or altitudes the foundation has been laid for detailed topographical and geological mapping for all Missouri. Any future changes which may be found necessary in the figures recently determined may be depended upon as being so small in value and as affecting the present results so slightly that discrepancies arising may be practically neglected. In mapping, which may be done before such minor corrections or adjustments have been brought to light, no essential changes are made imperative. With the exception of a few limited districts in the south-central portion of the State, every county in Missouri now has a number of accurately determined points from which detailed mapping may proceed; and all elevations may be referred directly to mean tide level.

It is of interest to note some of the results brought out by the revision of the railroad levels. Discrepancies of more than 50 ft. were detected in the previously recorded altitudes of some stations.

THE ATLANTA EXPOSITION.

Written for the Engineering and Mining Journal by our Special Correspondent.

The called convention of Southern mining men failed to convene as was originally proposed. The reason for this was that Dr. Eugene A. Smith, State Geologist of Alabama: Mr. T. H. Martin, editor of "Dixie;" Prof. John McCandless, of Atlanta, and your correspondent withdrew from any connection with the movement on the eve of the convention. After several conferences with Mr. Dimmock, the temporary secretary and originator of the call for the convention, it was decided that the idea of forming an organization in the South was subservient to a scheme which Mr. Dimmock unfolded, and that, instead of being based on a high plane for the public good, we should really only be aiding in an undignified manner in forwarding the personal ends of Mr. Dimmock and his associates from New York and Washington in a financial enterprise. Our grounds for withdrawing were merely that we did not consider we should be justified in organizing for the avowed purpose, after we had become satisfied, from Mr. Dimmock's own statements, that the chief ends sought were to enable him to push his proposed Southern Mining and Process Company and claim the backing of such a Southern mining association as it was the original intention to organize. We found no fault with his scheme; as a corporation enterprise it is perfectly legitimate. However, an organization was perfected by Mr. Dimmock and a few others, under the title of the Southern Mining Association, and the following officers were elected: President, Ben. F. Perry, Canton, Ga.; vice-president, Henry C. Deming, Deming, N. C.; secretary, Robert A. Dimmick, Washington, D. C.; treasurer, Heman D. Walbridge, Washington, D. C.; consulting engineer, K. P. Harvey, Punta Gorda, Fla.; directors, Ed. H. Lewis, Nashville, Tenn.; Jno. Wilkes, Charlotte, N. C.; J. H. Bagley, Catskill, N. Y.; J. H. Tatum, Bartow, Fla.; Fred. H. Stith, Haymarket, Va.; J. O. Robertson, Canton, Ga.; Hugh Fitzhugh, Birmingham, Ala. Committee on permanent organization was organized to draft a constitution and by-laws for the government of the association, which adjourned sine die.

Each day has added to the completeness of the exhibits here, and, at this writing, the Mineral Exhibit in the Forestry and Mining Building is complete, the finishing touches having just been made. North Carolina has added to its exhibit a slab of granite 28 ft. long, 8 ft. wide, average thickness 10 in., weight 32,000 lbs., taken from Mt. Airy, which has been placed on the outside of the building, near the north entrance. The publications of the Scientific Publishing Company have a prominent position on the south side, just west of the educational exhibit made by Edwin E. Howell, of Washington, which includes two large cases of minerals, representing his "College Collection," containing 330 specimens, and "Academy Collection," containing 200 specimens, as well as several geological maps, or models in relief.

The Forestry division, with the exception of the State exhibits of Georgia and Michigan, and some individual exhibits, is complete. Under the direction of Dr. B. E. Fernow, the government has exhibited 300 indigenous species of trees of the Southern States, each illustrated by specimens showing mature foliage, flower and fruit, with a section showing the bark and natural appearance of finished wood. A map shows the geographical distribution of each species; a frame made of timber of these species in the bark encloses commercial rough-sawed lumber with cross section of a log. Photomicrographs show magnified structures of wood in sections; development of the tree from germinating seedlings to the mature foliage and fruit, while the geographic distribution of arborescent genera, shown by a series of colored maps.

Turpentine orcharding is illustrated, as now carried on in the South, together with experiments for improving the methods of tapping. The manufacture of pine and palmetto fiber is illustrated. In the department devoted to forest planting are shown the foreign trees suitable for planting in the South. A tree-planting machine, in model, occupies a prominent position, as well as a large relief model, showing the methods of preventing soil erosion.

The mineral exhibit in and around the building of the Southern Railway Company includes pyramids of ironpyrites from the Chestatee Pyrite Company's property in Lumpkin County, Ga; bauxite from the Dykes District in Cherokee County, Ala., showing the different grades and colors of the mineral: red hematite ore from the Sloss Iron Works of Alabama; also coke from the Sloss works; and coal from Paint Rock, Tenn. Specimens of lead ore, together with a pig of lead, are exhibited from the mines of the Hardwick Lead Company, near Cleveland, Tenn. The Ducktown Copper District is represented by several fine specimens of copper ore and iron pyrites. The rare minerals and gems from North Carolina occupy three large cases in this building. Specimens of the economic minerals found along the line of the Southern Railway system are arranged in cases around the walls, while the building-stone is arranged in cubes, both polished and in the rough, in the center of the building.

To the Georgia exhibit at the State building there has been added a column of granite, weighing 68,000 lbs.; it is 36 ft. long, 5 ft. wide and 2½ ft. thick; there is also a shaft of marble weighing 45,000 lbs., 22½ ft. long, 5 ft. wide, 2½ ft. thick. Professor Yeates, State Geologist, is rapidly completing the arrangement of his mineral exhibit in the State building. In the Alabama building the exhibits have not yet been arranged.

Two columns erected outside of the Southern Railway building, and constructed of coal mined in territory served by that road, show that the production of coal in East Tennessee is 13,325 tons per day, and in Alabama 14,380 tons per day.

THE MANUFACTURE OF COAL BRIQUETTES.*

By William Colquhoun.

The manufacture of briquettes is an established and rapidly extending industry in Europe. The world's production of briquettes for domestic and steam-raising purposes is now about 7,000,000 tons per annum, which quantity of an otherwise waste of low-value product is converted into blocks having greater cohesion than large coal itself, waterproof, incapable of deterioration, and taking 14% less space in stowage than coal.

Preparation of the Coal.—Screened small coal as it comes frem the colliery has a higher percentage of ash than unbroken coal, and is very variable in size. It is usually necessary to prepare it for the purpose of agglomeration; if impure, it must be washed, and unless fine it must be crushed.

As briquette coal should not contain more than 4 or 5% of moisture, thorough drying after washing is necessary. Among the many appliances for this purpose exhaust or live steam has been used by passing it wet or superheated through pipes traversing the mass of coal. The method has been inefficient and costly, though in the brown coal industry in Prussia and Austria such an appliance, known by the name of Jacoby's oven, is extensively used.

The most important and most general of appliances for this purpose, however, is the Bietrix furnace, Fig. 1. This is a circular brick chamber encased in wrought iron plates, and having a dome roof. Inside this there revolves at the rate of 3 to 4 revolutions per minute a cast-iron table 12 to 18 feet in diameter mounted on a vertical shaft. At one side of the chamber is a fire-grate, the gases from which pass over the top of the table, through flues on the opposite side, and back underneath the table. The coal is fed from a conveyor through a feeding arrangement in the center of the dome roof on to the center of the table, from which it is gradually withdrawn to the periphery by a system of scrapers until finally it falls into a conveyor direct to the compressing machine. The temperature of the drying gases is from 100 to 200° C., which is in itself high enough to ignite the coal if it were not being continually turned over and protected by the steam it gives off; these same factors prevent the coal from being robbed of any of its gases. The furnace requires the attention of a fireman, and uses about 35 lbs. of fuel per ton of coal dried, and the extra cost of drying may be considered as equal to the 1 or 1½ % of agglomerating pitch saved by its use. The furnace costs about $3,750 erected complete in Belgium.

Crushing the coal has two equally important objects—to reduce the larger particles of coal to a reasonable size, and to insure the thorough admixture of the agglomerating material and coal. Crushing mills of the roller type, the rolls of which are pressed together by springs or weights, break the coal too uniformly, crushing hard grains, which would be better left alone, since they already resist compression. The Carr disintegrator is to be preferred, as it breaks by impact only, the most tender particles being broken into powder while the hard ones resist. This is important when we remember that the finer the coal is the greater will be the quantity of agglomerating material required to cover the grains. On the other hand there must be a sufficient proportion of powdering coal to fill the interstices between the larger particles. A 30-in. disintegrator running at 300 revolutions will pass about 60 tons of coal per day.

Attempts have repeatedly been made to agglomerate small coal without the use of any binding ingredient by caking it into a mass under heat and pressure. Such processes have succeeded when a highly bituminous coal was employed, but only with the loss of some of the volatile constituents and at the risk of firing the coal. The lignites, however, carry a sufficient quantity of bitumen to make them fit for compression when heated in ovens at a temperature of 60° to 70° C.

The supply of pitch derived by distillation from gas-tar is unfortunately limited, and local conditions often prohibit its use. Where it is available, at a reasonable cost, a difficulty is found in that at the gas and chemical works the distillation is more or less incomplete. When anthracene and other heavy oils are valuable the distillation is carried so far as to destroy the binding properties of the residual pitch. A suitable pitch should become soft at 75° and melt at 100° to 120° C., so that it will remain hard at the ordinary temperature and be capable of carriage in bulk. Its fracture should be dead black, conchoidal, clean and soft, without being greasy to the touch, and the edges should not splinter when bitten with the teeth.

While pitch has been recognized as the most convenient, there is room for a cheaper and less objectionable binding agent, and many endeavors have been made to find one that would, like pitch, help and not retard the combustion of the fuel, and yet would not smoke or smell as pitch does.

Clay has a use for domestic fuel in localities where the price of pitch is prohibitive and closed stoves are in use. Although its addition increases the incombustible matter in the fuel, instances of the use of clay are still to be found in outlying parts of France.

Although lime also adds to the incombustible matter in the fuel, it has the advantage of rendering it inodorous by combining with the free sulphur in combustion. It has been used in several instances with success in the form of a lime wash of proper consistency mixed up with the small coal; the blocks, however, require to be thoroughly dried in ovens and afterward rendered waterproof, both of which are costly operations.

Waste grain, starch residues, and the albumen obtained from vegetable roots, have recently received attention as agglomerants in Great Britain, as they do not add useless matter to the fuel, have no objectionable smoke or smell, and may be of great value to outlying countries where pitch is too expensive or the climatic temperature too high. Briquettes so formed require to be artificially dried, and must be dipped in some solution to prevent their being softened by wet weather.

Other agglomerants than these have been tried, including among many others molasses, sawdust, plaster-of-paris, animal blood, manure, magnesia, chalk, paper pulp, nitrate of potash, silicate of soda, etc.

The pitch may be added to the small coal either in the liquid or dry state. The melted pitch process is now limited practically to the important coal field in the Centre (France), where the difference in price of tar and pitch is considerable, and where as much as 30% of the former is added to the melted solution of pitch. The smoke and smell is therefore increased, but apparently the consumers do not object, and it is remarkable that the process requires a smaller quantity of binding material. The usual practice is to melt the pitch in closed vertical wrought-iron cylinders, making the additions of tar from time to time, while the mixture is being slowly stirred by a revolving shaft with pugging arms. The

Fig. 1.

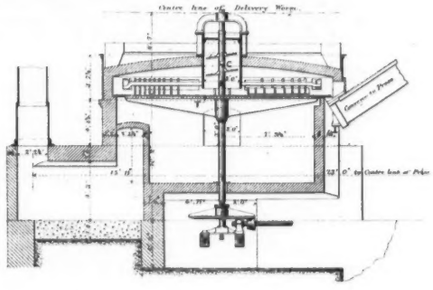
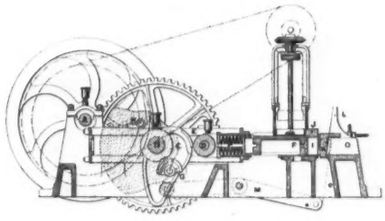


Fig. 3.



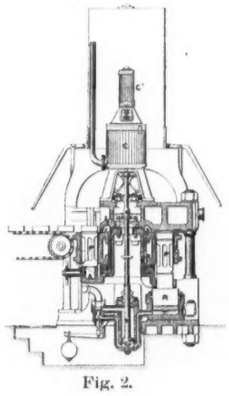
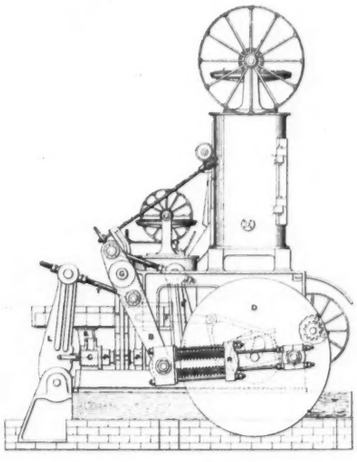


Fig. 2.



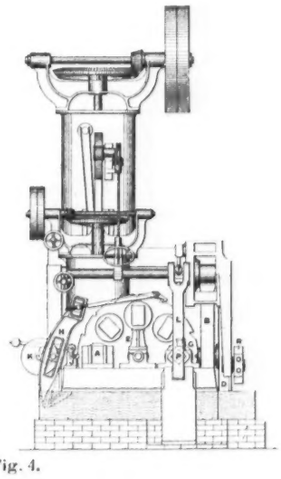


Fig. 4.

MACHINERY FOR MAKING BRIQUETTES FROM COAL.

* Abstract of paper read before the British Institution of Civil Engineers.

solution is then forced by the admission of steam to the top of the cylinder into a secondary reservoir generally in the roof of the factory, from which it is distributed on to the coal.

In this connection it may be mentioned that there are several patents having for object the use of tar only, by which it is proposed to heat the mixture of coal and tar in closed vessels and so drive off the lighter elements in the tar and recover them as by-products of the manufacture. Tar is, however, not so much cheaper than pitch as to justify the extra cost.

The dry-pitch process, as distinct from the melted pitch process, consists in first breaking up the hard pitch in a mill, adding it in proper proportion to the coal, and then passing the mixture through a disintegrator with the double object of completing the admixture of the materials and of reducing them to the proper degree of fineness. The proper proportions are measured by apparatus adjustable in speed, namely, a pair of Archimedean screws, or elevators, or revolving tables, or encased cylinders with concave recesses.

This is the process found in most general use in Europe, sometimes varied by the interposition of a drying or heating furnace between the main elevator and pug-mill. The paste as delivered to the compressing machines should be between 70° and 90° C. in temperature; it should contain sufficient water to render it plastic and facilitate the sliding of the particles one on the other, namely 3 to 5%; the quantity of pitch may vary from 6 to 10%, according to the character of the coal and its degree of fineness.

Fig. 5.

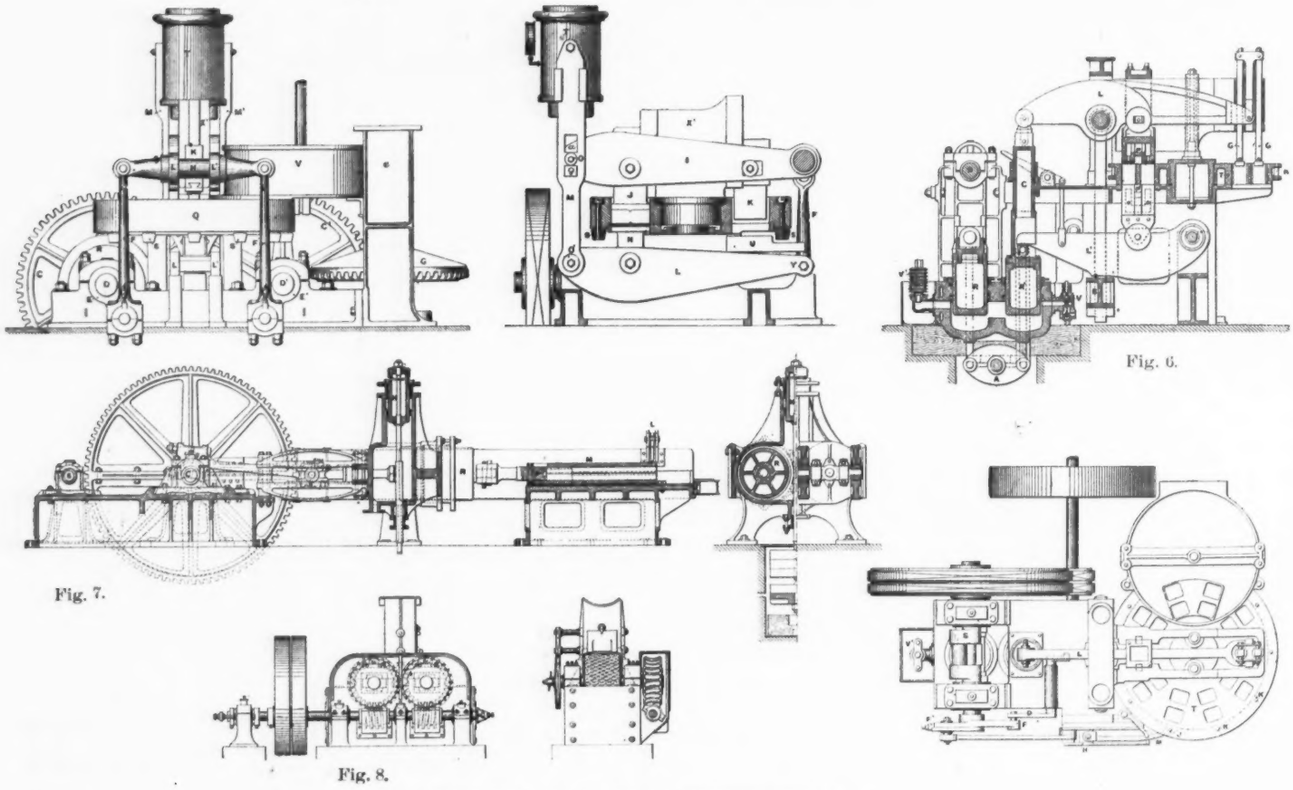


Fig. 6.

Fig. 7.

Fig. 8.

Machinery for Making Briquettes from Coal.

Compressing machines have received much attention from engineers because of the great wear and tear which occurs, the high pressures necessary, and the clogging dust in which they are often required to work.

The Stevens Press has a horizontal revolving table with moulding dies, each of which is provided with a separate compressing piston. The molds and pistons are for compressing two briquettes at each stroke. The pistons rest and slide upon an inclined plane. The table is rotated intermittently by pawls, and this press has the distinctive feature that absolute exactness in the movement of the table is not required.

The Mazeline Press (Fig. 2) has a horizontal moulding-table, each of the moulds in which is fitted with a compressing piston P, these pistons being successively forced upwards by the ram R, operated by the piston in the hydraulic cylinder H. The rod of this latter piston passes through a center-piece, around which the table revolves, and at its upper end carries a steam-piston working in the cylinder C. When steam is admitted into the upper end of this cylinder, the piston with its attachments is forced downwards and the compressing-ram, R, upwards. The bottoms of the compressing-pistons rest on an inclined path A A′, by the action of which compression is made to commence in part before the pistons cross the top of the compressing-ram, and by which also the briquette is afterwards ejected upwards from its mould and mechanically swept off the table on to a traveling-belt or conveyor. The machine is often made double-ended, the pug-mill serving two tables.

The Dupuy Press is a horizontal press (Fig. 3), in which the briquettes are all formed in one mold and by one compressing piston. The driving shaft A is driven by belt pulleys, and carries a pair of fly wheels and a pair of pinions engaging in the wheels on the secondary shaft B. Upon this shaft is keyed a large compound cam C, which acts upon the friction roller D carried between the cheeks of a sliding block E. This block reciprocates horizontally in parallel guides contained in the general framing of the machine, and to its front end is attached the compressing piston F. When the piston has completed its forward stroke, it is returned to its position by the cam G.

The mold I has a fixed cover, J, and a sliding back, K, which latter after compression is suddenly lifted on its guide plate L by the action of a pair of levers, M, to one end of which it is linked. These levers have friction wheels at their other ends running upon cam paths, shown dotted in the figure. When the briquette has been compressed the pressure is momentarily released by the shape of the cam C, the side levers are depressed, and the back plate of the mold raised, and finally the cam C again comes into action and thrusts forward the finished briquette upon the table, O, clearing the way for the back plate to again drop into its seat. Breakages through any accident are partly provided for by a piston, P, backed up by strong springs.

Middleton's Press (Fig. 4) compresses the coal simultaneously from opposite sides and, therefore, gives a still higher cohesion to the fuel than the preceding machines. It has a revolving molding table mounted upon a horizontal axis. The paste passes from the pug mill into a feeding pan at the bottom of which is a feeding recess or slide holding a given quantity, which is thrust forward into the successive molds by a piston (not shown). The paste is thus lightly compressed in the mold to a certain extent, adjustable by a spring on the feeding piston, and it is prevented from being thrust through the mold altogether by a fixed stop plate. In due course the full molds arrive opposite the compressing pistons by which the briquettes are compressed on their opposite faces simultaneously. This motion is derived from a pendulum lever, rocking on its center, through the action of a disc crank, to which its lower end is connected by a rod. The pendulum lever is tied by tension rods to the two compressing levers, which simultaneously advance or retreat the compressing pistons. The briquettes are successively ejected on to a table supported by a bracket, the ejecting piston being worked from the crank shaft.

The table is rotated by a pawl pulled over by a quick return lever; it is locked in position by a catch kept forward by a weighted lever and released at the proper time by the action of a cam. The molds are formed in steel dies turned to fit into holes bored in the table: a change of form or weight of the briquettes does not therefore necessitate a change of table, but only of its dies. The machine is made in four sizes to produce 10 cwts, 1 ton, 2½ and 5 tons per hour respectively.

The Bietrix Press (Fig. 5) is a double compression machine. The two shafts D D′, driven through toothed gearing from the shaft A, have forged steel cranks E E′ tied by connecting rods to the crosshead H, and so communicating motion to the double-cheeked lever I I′. To this lever are attached the compressing piston J and the ejecting piston K, each moving vertically in guides on the fixed center piece X′. When the lever is drawn down by the cranks the paste is compressed against a lower piston N until the limit of compression is reached, when a reaction sets in and the lower piston attached to the levers L L′ continues the compression. The upper and lower levers are connected by the links M M′, and the system acts like a pair of nut crackers, the point

O being fixed during compression of the upper face and the point Y during compression of the lower. A compensating hydraulic cylinder T, the piston of which is connected to the sliding fulcrum O of the upper lever, regulates by a spring valve the pressure applied to any particular coal. The molding table is rotated by the pins S S engaging successively in grooves cut in the drum R, the form of the grooves starting and stopping the motion of the table without shock. The finished briquettes are ejected on to the rocking table U which tips them on to a traveling belt.

There are about 250 of these machines in use in Europe. They are made in various sizes for briquettes weighing 7, 12 or 24 lbs., the table containing 10 to 12 single or double molds. The middle-sized machine weighs about 15 tons and costs $6,250. Its average output is 90 to 100 tons per day of 12 hours, and absorbs 20-H.P. to drive it.

The Roux-Veillon Press (Fig. 6) resembles the Bietrix Press in many particulars, but is more complicated and costly. The use of hydraulic plungers obviates the risks to which lever machines are subjected.

The Bourriez Press (Fig. 7) is of a different type from any of the foregoing, compression being effected in an open mold of sufficient length to ensure large frictional resistance of the paste against its walls. The molds, M, measure 8½ in. × 6 ins. in cross section, and are 5 ft. 6 in. long; they are divided longitudinally, the lower half fixed to the bed of the press and the upper depressed by weighted levers. The compressing pistons, P P, have a stroke of 11¾ in., derived from two cranks of 180° on the shaft, C, which is driven at 22 revolutions per minute from the pinion shaft, S. The machine is also made with three compressing pistons and molds, the cranks being set at 120°, and sometimes a hydraulic compensating arrangement is provided. In action each stroke of the piston forms a briquette 6 in. thick against the back of the one last made and thrusts the entire series forward 6 in.; they therefore adhere to each other somewhat strongly, and require to be separated by hand with cleavers as they leave the mold. The molds wear out rapidly, but otherwise the machine works with little expense for repairs. The pressure being of prolonged duration, it is peculiarly fitted for wet coals, but more pitch is required than in the machines previously mentioned.

In addition to the machines previously described there is a class used for the production of eggettes or "ovoid fuel," in which a pair of horizontal rolls, with corresponding mold-hollows in their surfaces, revolve in contact with each other in opposite directions. The Fouquemberg machine, for example, Fig. 8, consists of a pair of rolls driven by worn-wheel gearing, which on account of the "back-lash" is superior to toothed gearing. The worms make 25 revolutions for each one of the rolls, and they are covered with a dust-proof casing and run in an oil bath. The machine illustrated has a capacity of 6 tons per hour, the ovoids weighing 3 to 4 oz. each. The ovoids are not formed simultaneously in all their parts, but by a rolling action and a relatively large proportion of pitch and water is necessary to prevent their crumbling. The waste through crumbling and failures in forming varies from 4 to 10%, and is collected beneath a small screening grid beneath the machine, over which the fully formed ovoids slide on to a traveling belt. This fuel corresponds to "screened nuts" and is used for firing boilers, or for domestic purposes.

As briquettes straight from the press are soft, they are usually transported on a slow traveling belt, on which they have time to harden and cool.

The form and weight of briquettes have been determined by the requirements of the trade in several directions. Thus the European railroads specify for briquettes of 10 lbs, or under, on account of the labor involved in breaking up larger blocks on locomotive tenders; the West Indies and other countries where native labor is available, prefer briquettes of 28 lbs. weight, that constituting an ordinary load. The smaller the briquette the greater is the loss by abrasion in the course of handling In stocking, or in ship's bunkers, briquettes occupy a space of 37 cu. ft. per ton as against 43 cu. ft., the average of screened large coal.

One of the advantages of this form of fuel is that the small coal may be washed, and the percentage of ash reduced to a point as low as that in large coal. On the continent of Europe, where the coal is generally very dirty, practically the whole of the produce of briquettes is made from washed coal, and the average ash is 6%.

The strength with which the particles of coal adhere to each other in briquettes is invariably 10 to 20% higher than that of the large coal from which they are formed. This is due to the obliteration of the well-defined lines of cleavage which characterize all coals.

Briquettes should be sound and hard, with strong edges, the surfaces free from cracks, the fracture close and showing no free particles of pitch. They will not deteriorate to any extent, even when stocked for years, and they should burn freely and bind like a good semi-bituminous coal. If made from anthracite coal, they should be perforated with holes by any of the methods usual in the trade or made ovoid-shape.

The following is the cost at a well-known English briquette factory making 80 tons per day:

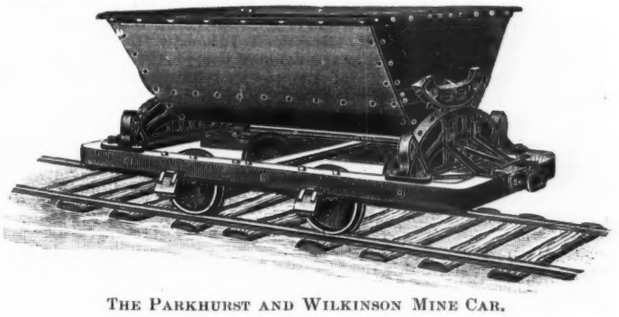
	Cost per ton.	Cost per ton.
Labor, including stacking (when necessary)	$0.161	
Oil and grease	.006	
Sundry stores	.010	
Fuel for boilers	.040	
		$0.217
Material for briquettes:		
Coal slack, 72 tons	$83.50	
Pitch, 8 tons	50.40	
	$133.90	$1.673
Interest and depreciation at 7%		.050
Total cost per ton		$1.940

In conclusion, it may be remarked that machines similar to those described are used in various parts of Europe for the agglomeration of coke breeze or gas coke, charcoal, sawdust firelighters, powdery iron ores, cement and dolomite, magnesite and chromite bricks.

Coal Mining in Russia.—Under the direction of the Ministry of Agriculture and Imperial Domains a special commission has been appointed to consider the present condition of the coal-mining industry in Russia, and the best steps which can be taken to promote its further development.

THE PARKHURST & WILKINSON MINE CAR.

The accompanying illustration represents a new mine car recently placed upon the market. It is of the side-dumping type, with a rocking basket. At present the car is made in four sizes holding respectively 16, 20 and 27 cu. ft. The illustration shows a 16-ft. car, and one of this pattern weighs a little less than 1,100 lbs. The body is made of steel plate ⅜ in. thick, braced at the top and corners by 1¾ in. steel angles riveted to the plate. The car can be dumped at either side, and practice has shown that it dumps very easily. The body is held in upright position by means of a lever held between two lugs, and by pressing the lever the car is easily emptied. The basket or body is carried upon rockers, which prevent it from becoming detached from the trucks when dumping, the latter being a fault noticeable in many mine cars. The truck-frame is made either of iron or steel. The axles are of steel 2 in. in diameter. The wheels for this sized car are 12 in. in diameter, and it can be made to suit any gauge from 18 to 24 in.



THE PARKHURST AND WILKINSON MINE CAR.

A number of these cars have been placed in use at different mines, and purchasers have reported that they work to their entire satisfaction. The car is manufactured by the Parkhurst & Wilkinson Company, of Chicago.

ABSTRACTS OF OFFICIAL REPORTS.

Colorado Fuel and Iron Company.

The annual report of this company for the year ending June 30th last shows that there were sold during the year 939,611 tons of coal, besides which the company used 48,503 tons at the mines, 95,576 tons in the iron department, and 394,509 tons at the coke ovens for conversion into coke. Of the coke produced 122,960 tons were sold, and 124,167 tons used by the company in the manufacture of iron.

The tonnage statement for the iron department shows a very large increase over the preceding year in almost all items, the production of pig iron having more than doubled, with almost everything else in proportion. The quantity of iron ore raised was 179,085 tons. The pig iron made was 68,585 tons, in addition to which 4,634 tons of spiegeleisen were produced. The production of finished iron and steel, etc., is reported as follows: Castings, 3,602 short tons; brass castings, 47,942 lbs.; iron pipe, 1,946 short tons; steel rails, 59,550 long tons; spikes, 33,096 cwt.; merchant bar, etc., 13,873 short tons; steel ingots, 75,701 long tons; blooms, 70,377 long tons; rail mill, steel angle bars, etc., 4,215 short tons.

The gross earnings for the year were $5,667,185, of which $2,452,344 were from the fuel department: $2,930,999 from the iron department, and the remainder from miscellaneous sources. The operating expenses amounted to $4,862,955 in all, $1,972,071 being in the fuel department, and $2,682,464 in the iron department. The apparent profit from the fuel department was, therefore, $480,273, and from the iron department, $248,537. The total net earnings amount to $804,230, from which are to be deducted general expenses of management, insurance, etc., amounting to $125,779, leaving a balance of $678,451 to be carried to income account, this latter balance showing an increase of $116,342 over the preceding year.

Pump with Constant Discharge.—According to this article, by Gerard Lavergne, as abstracted in the papers of the Institution of Civil Engineers, there are considerable advantages to be gained by making the discharge of a reciprocating pump more uniform. A higher speed and a smaller pump and prime motor, in consequence, can be used; the transmission of power from the motor to the pump becomes simplified with the greater speed of the pump; the suction and discharge pipes can often be reduced in size. The article describes a double-acting piston pump in which the discharge is made approximately constant throughout the stroke by a simple arrangement of the valves of the two pump cylinders. The cylinders are exactly alike and side by side, being cast in one piece. The pistons are driven from a common shaft with cranks at 120° apart. The cylinders are double-acting. One cylinder draws water from the suction pipe, which has a branch to each end of the cylinder, and discharges into the second cylinder: there being direct communication between the cylinders at both ends. The second cylinder, drawing water from the first, pumps it into the discharge pipe. All the six valves necessary for these operations open toward the discharge. If a complete stroke be divided into 12 equal parts, the delivery in each of these periods is the same; the delivery at each end of the pump separately varies from a maximum to nothing, but the joint delivery of the two ends is nearly constant. This is shown by diagrams of the flow at each end of the cylinders throughout the stroke. The delivery of the pump for one complete revolution is three times the capacity of one of the cylinders. Illustrations are given of the pumps of this type as made for various services, and the results are given of tests made with a small pump worked by hand and also driven mechanically at speeds up to 120 strokes per minute.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

SUPREME COURT OF CALIFORNIA.

Mining Liens.—The statute securing a lien on mining claims for labor performed thereon does not authorize a lien for labor in working a mine on lands held under an agricultural patent from the United States.—Morse vs. De Adro. 40 Pacific Reports, 1018.

COURT OF CIVIL APPEALS OF TEXAS.

When Machinery becomes a Part of the Realty.—Machinery placed in a building, and fastened by bolts to a brick foundation, thereby becomes a part of the realty, and, with the latter, subject to an existing vendor's lien thereon.—Simpson, Hartwell & Stopple vs. Masterson, 31 Southwestern Reports, 419.

SUPREME COURT OF NEW HAMPSHIRE.

Taxation of Water-Power.—Where a water-power is created by a dam across a river which is the dividing line between two towns, it is taxable in each town to the extent of the value of the portion situated therein, though it is used in only one of the towns.—Amoskeag Manufacturing Company vs. Town of Concord, 32 Atlantic Reports, 151.

SUPREME COURT OF NEVADA.

Mining Partnership.—A partnership agreement to locate mining claims being within the statute of frauds, one partner cannot claim an interest in a claim located by another under an oral agreement that they should be partners in all such locations, when no trust arises because partnership capital was employed in locating the claim. The statute is as follows: "Sec. 55. No estate or interest in lands other than leases for a term not exceeding one year, nor any trust or power over or concerning lands, or in any manner relating thereto, shall hereafter be created, granted, assigned, surrendered, or declared unless by act or operation of law, or by deed or conveyance in writing subscribed by the party creating, granting, assigning or declaring the same, or by his lawful agent, thereto authorized in writing." Equitable relief may be given against the partner holding the legal title when the property has been acquired by partnership capital upon the theory that a resultant trust exists—a trust arising by operation of law, and within the exception of the statute.—Craw vs. Wilson, 40 Pacific Reports, 1076.

Electricity on the Erie Canal.—The Cataract General Electric Company began on September 30th the erection of the poles for the test of electric power on the Erie Canal. The section selected for the trial is in the neighborhood of Tonawanda, which includes a fairly sharp curve, and where all the conditions will be of considerable difficulty and will give a full trial of the system. The question of passing trolley and mule boats will be fully tested.

British Coal Exports.—The total amount of coal exported from Great Britain for the eight months ending August 31st, this year, was 21,853,149 tons; showing a decrease of 351,848 tons as compared with the corresponding period last year. The largest amounts taken were 3,273,874 tons by France; 2 924,153 tons by Italy; 2.491.966 tons by Germany; 1,840 474 tons by Sweden and Norway; 1,379,407 tons by Spain, and 1,-2:6,342 tons by Russia. Denmark, Holland and Brazil are the only countries which show an increased amount of British coal taken this year over last.

A Big Russian Oil Well.—A St. Petersburg dispatch states that parties drilling a new oil-well on the Apsheron Peninsular reached oil on September 9th, and that the well is one of the largest yet discovered. At the outset the oil jutted out to a great height, and the delivery was estimated at 500.000 poods (18,000,000 lbs.) daily. For the week between September 13th and 20th this increased to about 1,000,000 poods a day, and for several days following September 20th nearly 1,500,000 poods per day were thrown out. From the latter date the delivery receded a little and the well is now being brought under control.

German Miners' Schools.—The Westphalian Miners' Provident Fund now maintains 15 miners' preparatory schools (Bergvorschulen) in different towns in the mining districts, the chief ones being at Dortmund, Bochum, Schalke, and Gelsenkirchen. In these schools there were 482 young men under instruction at the last term; the full course continues for two years. Part of this school system is a laboratory, which last year made 4.809 analyses of fire damp; 189 complete analyses of coal, besides a number of tests of coke and briquettes; analyses of iron ore and of water. Among the different attachments to these schools, intended for practical instruction, are a mine-heading at Schalke, completely equipped and in regular operation, where many experiments have been made in connection with the action of explosives on mine gases and coal dust. There is also a shaft which is being put down by the pupils and which at the end of the last term had attained a depth of 20 meters. This shaft is provided with pumps, hoist, and all the necessary apparatus. Other work in progress in the schools includes a map of the Westphalian coal fields, and a graphic representation of the development of the different mines.

The Gobert Process of Shaft Sinking.—At the recent meeting of the British Association, a paper by M. A. Gobert, of Brussels, on "The Gobert Freezing Process for Shaft Sinking and Tunneling under Rivers," was read. By this process the water-bearing strata and running sands are frozen by means of liquid ammonia poured into the freezing pipes, which are sunk vertically into the ground to be frozen. The liquid ammonia, changing into gas in the freezing pipes, produces a more intense cold than that obtained by unfreezable liquids, which are themselves rendered cold by the evaporation of ammonia. By adopting direct evaporation the danger is avoided of rendering the ground unfreezable in the event of the escape of the unfreezable liquid: the cost of the installation is reduced by dispensing with the unfreezable liquid and with the apparatus used for rendering it cold, and the power of the refrigerating machine is much better utilized. The process possesses the advantage of being able to freeze the bottom without freezing the upper layers. Thus, when it is necessary to deepen a shaft the lining of which has been flooded, the freezing pipes can be placed inside the lining, without any risk of bursting the lining by the freezing of the water which is inside it. In the case of tunnelling under a river, as the evaporation of the ammonia takes place below the water-level, hardly any of the cold is lost in the contact of the pipes with the water, whereas a great quantity would be lost in employing an unfreezable liquid.

PATENTS RELATING TO MINING AND METALLURGY.

United States.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

TUESDAY, OCTOBER 1ST, 1895.

547,009; 547,010; 547,011. Process of and Mold for Casting Compound Ingots for Armor Plates. Thomas Hampton, Sheffield, England. Process consists in casting a first layer in horizontal position, and while the same is still molten pouring in the metal for a second layer in numerous small streams or "spray" distributed over the horizontal area of the first layer.

547,116. Amalgamator. Adrian R. Hamlin and John B. Gonyeau, San Francisco, Cal. Combination of a trough, suitably suspended at its discharge-end and at its receiving end by an axially pivoted lever carrying at its upper end a rounded shoe, engaged with a double-ended and obliquely-faced cam; means for carrying and rotating the cam, and a spring adapted to return the lever to its former position after engagement with the cam.

547,118. Method of and Apparatus for Manufacturing Gas. John W. Hayes, Philadelphia, Pa. Combination of a single casing containing two fuel chambers having grates and air inlets, a checkerwork structure located in one side of the second fuel chamber and extending from the bottom of the chamber to or above the top of the bed of fuel, a carbureting chamber, a gas superheating chamber located between the fuel chambers and below the carbureting chamber and provided with a gas outlet, and a conduit through which the bottom of the checkerwork in the second fuel chamber communicates with the gas superheating chamber.

547,129. Jig for Separating Slate and Rock from Coal. David E. Phillips, Mahanoy City, Pa. Combination of a jig pan having a perforated diaphragm extended toward the front of the pan to receive the coal; means to force the water upward through the same in successive pulsations to separate and raise the coal to the top of the heavier slate and rock, a coal discharge outlet, a compartment below this outlet and at the outer end of the diaphragm, to receive the substratum of slate and rock, and an endless conveyor.

547,184. Stamper-Battery for Disintegration of Metalliferous Ores. Alfred G. Saunders, Adelaide, South Australia. The stamp is moved by a pitman and crosshead, springs being placed above and below the crosshead to take up shocks.

547,239. Amalgamator. Erastus S. Bennett, Denver, Colo. The combination in an amalgamator provided with corrugated plates having depressions closed at the ends of inverted trough-shaped auxiliary retaining plates located in said depressions.

547,276. Process of and Apparatus for Obtaining Ammoniacal Products. Ludwig Mond, Winnington, England. Patented in England July 25, 1885. No. 8,575. The improvement consists in washing the gases with agitation in water to remove soot and dust and to condense the tar and the fixed ammonia, separating the free ammonia by means of an acid solution, passing the hot gases and water in prolonged contact with each other in reverse direction, and passing this hot water and the air for the producer in prolonged contact with each other, in opposite directions; and lastly, using the water over again to cool the hot gases.

547,329. Process of Refining Lima Oil. Francis X. Byerley, Cleveland, O. The process consists in distilling the oil at a low temperature with the aid of an exhaustion of the vapors, and during such distillation subjecting the impurities to the action of air in volume sufficient to effect a substantial conversion thereof, as indicated by the loss of the characteristic malodor of the oil.

547,332. Distillation and Breaking up of Liquid Hydrocarbons, and Apparatus therefor. Frank W. Clark, London, England, Assignor to the Frank W. Clark & Company, Limited, same place. Patented in England March 1st, 1894, No. 4,510, and in Belgium February 26th, 1894, No. 108,750. The method consists in causing the liquid to flow in numerous thin or shallow streams in one direction over the operative surfaces of an evaporator or retort, circulating a carrier such as air first in contact with heating surfaces and then over said streams of liquid in the reverse direction and conveying the vapor therefrom by means of said carrier through a condenser and then conducting the carrier together with any uncondensed vapor from the condenser back into the evaporator or retort, the unvolatilized liquid in the evaporator or retort and the liquid of condensation in the condenser being drawn off as required.

547,361. Process of Treating Metals. William J. Sager, Warren, Pa. A composition of matter consisting of prussiate of potash; saltpeter; blue vitriol; sal ammoniac; concentrated lye; salt and borate of iron in substantially the proportions described is used.

547,381. Art of Coating Metals with Aluminum or Alloys Thereof. Robert McKnight, Philadelphia, Pa., assignor to Matthew J. Grier, same place. The process consists in coating the foundation metal with a film of a metal more fusible than aluminum, and then dipping the metal thus coated, in the presence of an acid capable of combining with the metallic film, into a bath of molten aluminum or an alloy thereof.

547,382. Concentrator and Sluice Box. Herbert L. Phillips, St. Paul, Minn. A sluice box having sunken riffles at intervals and with obstructions at the lower edges of said sunken riffles and pipes leading from said sunken riffles, and a concentrator into which the pipes from said riffles lead, consisting of a casing having a mercury amalgam trough around the interior of its lower part, a hood beneath which the material carried by said pipe rises, whereby the heavier particles are separated in said sluice box, and carried to the concentrator, and the inflowing material turned downward before passing through said concentrator to cause it to be precipitated upon the mercury troughs.

Great Britain.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy:

WEEK ENDING AUGUST 17TH, 1895.

14,155 of 1894. J. J. Hood, London. Extracting gold from ores by means of a solution of a mercury or lead salt in an alkaline cyanide.

14,196 of 1894. A. D. Shrewsbury, Charleston, West Virginia, U. S. A. In coke ovens, arrangements to heat the incoming air and to distribute it evenly over the coke.

18,398 of 1894. J. Hosking, Roskear, Cornwall. For classifying minerals, a horizontal revolving cylinder composed of wire cloth of gradually increasing mesh, partially immersed in water in a hutch, with a contrary current of water.

12,290 of 1895. J. J. Crooke, New York, U. S. A. Chlorinating by mixing the ores with an alkaline chloride and nitrate of copper, and treating with a chlorine releasing acid.

WEEK ENDING AUGUST 24th, 1895.

18,519 of 1894. J. Pfleger, Kaiserslautern, Germany. A method of making cyanides from air, alkali and carbon, in such a way that it is not necessary to remove the oxygen from the air.

5,789 of 1895. W. H. Legate, Hartford, Conn., U. S. A. Preparing aluminum for plating by first immersing in a bath of sulphuric acid and boracic acid, and then in one of soot and hydrochloric acid.

6,766 of 1895. J. Boland, G. W. Fritz, H. F. Doris and J. J. McCloskey, Pittsburg, Pa., U. S. A. A coal cutter with a straight outer cutting surface, and a cutter with a conical outer cutting surface set obliquely to the straight cutter.

PERSONAL.

Mr. John Fulton, of Johnstown, Pa., is now examining some coal property in Alabama.

Mr. George Mainhart has been appointed superintendent of the North Banner mine, Nevada County, California.

Mr. Algernon Del Mar, mining engineer, of California, recently left London for the Transvaal on professional business.

Mr. L. W. Richards, superintendent of the American Steel Casting Company, Sharon, Pa., has resigned and will remove to columbus, Ohio.

Mr. Frank Nicholson, mining engineer, of Phœnix, Ariz., is engaged in making an examination of the Euclid group of gold mines in the Harquahala district.

Mr. Theodore P. Comstock has opened an office at Prescott, Ariz. He will report on mine management and professional work of all kinds strictly in the interest of investors.

Mr. J. S. Casey, mining engineer, of Joplin, Mo., who has been associated with Mr. J. R. Holibaugh, will now carry on the business alone owing to Mr. Holibaugh's departure from Joplin.

Mr. William Van Slooten, mining engineer of New York, sailed October 10th, on his way to examine some gold properties in Ecuador and Bolivia in the interest of New York capitalists.

The firm of Rigney & Cannon, mining and civil engineers, of Cripple Creek, Colo., has been dissolved. Mr. T. P. Rigney will carry on the business on his own account and under his own name.

Mr. David Baker, who resigned in September, 1894, as superintendent of the blast furnace department of the Maryland Steel Company at Sparrow's Point, has been appointed to his old position. His assistant will be Ralph Sweetser, of Boston, a graduate of the Massachusetts Instituteof Technology.

Capt. Chas. Hoxie, who has for three years past acted as captain of the great El Callao mine in Venezuela, has returned to New York. Three years' residence at El Callao is as much as the constitution of an American can stand, and few remain that length of time. Capt. Hoxie has retired from his post with high credentials.

Mr. Horace F. Brown of Chicago, Ill., consulting and mining engineer will leave for Cape Breton, Nova Scotia this week to arrange for preliminary plans, for a complete copper plant for the Eastern Development Company of Boston, at their copper mines in Cape Breton. Mr. Brown is the patentee of the Brown Horseshoe Furnace and a number of other metallurgical appliances.

Mr. William Sargant has retired from the firm of W. T. Sargant & Sons, of London, after 34 years' partnership. He has founded a new firm under the title of William Sargant & Company, and will carry on the business of metal brokers. Mr Sargant's wide experience and high standing are sufficient guarantee for the success of the new firm. His partners are his sons, Charles A. and Percy E. T. Sargant, who have had respectively 12 and 9 years' experience in the business.

Information is wanted of John Nethway Beal, who was at Prescott, Arizona, in 1887, and was interested in and is supposed to have sold mines there. He was also interested in mines in California. Description: 5 ft. 10 in. in height, of military bearing; blue eyes, fair complexion, dark brown, bushy whiskers; spoke with slight English accent. Information is wanted by relatives. Will readers of the "Engineering and Mining Journal" kindly send to the editor any information they may have concerning Mr. Beal?

A number of chemists employed by the Carnegie Steel Company change their positions this month on account of resignations. J. B. Brainbridge, who has been at the Edgar Thomson works for four years, leaves for Birmingham, Ala., where he takes the position of chief chemist at a blast furnace. Wm. Pierce, also of the Edgar Thomson, has taken the position of chief chemist for the Pittsburg Iron and Steel Company. Alex. McKenna, assistant chief chemist at the Duquesne Works, takes the position of head chemist at the Sterling Steel Works at Demmler, and Charles Hart, another assistant at the Edgar Thomson, goes to the Calumet furnaces at Chicago.

Mr. John R. Holibaugh, mining engineer, who has done so much for the zinc and lead mining industry of Missouri, has left Joplin and gone to Marshall, Mo., where he will remain for some time to come. In addition to professional work at Joplin, Mr. Holibaugh has helped it with his pen for many years and given to it wide publicity. Readers of the "Engineering and Mining Journal" who are familiar with Mr. Holibaugh's contributions to this paper will be pleased to learn that the Scientific Publishing Company has just published a thorough monograph on "Lead and Zinc Mining in Missouri and Kansas," by Mr. Holibaugh, than whom no man is more competent to write on this subject. An elaborate map of the district accompanies the work.

OBITUARY.

John C. Kirkpatrick, owner of the Leechburg Iron Works, died at Pittsburg, Pa., on October 5th.

William Yount, a mining man of Nye County, Nev., was drowned on September 24 at Warner's Hot Springs, 70 miles from San Diego, Cal.

George Berliner, a mining engineer of San Francisco, Cal., died in Mexico on September 14th, as the result of injuries received in a railroad accident on September 12th.

Thomas Brown, of the firm of Murray, Kearney & Brown, operators of a colliery at Dunmore, Pa., while in the mines on October 5th, overlooking some work that was in progress, was caught by a sudden fall of roof coal and instantly killed.

Pomeroy P. Dickinson, civil engineer, died in New York City, on October 4th, aged 68 years. He was prominent in engineering circles. Many railways of the country, the bridge over the Hudson at Poughkeepsie, and other public works, stand as monuments of his ability. He was a member of the American Society of Civil Engineers.

Oliver Anthony Farrin died in New York City on October 4th. He was for many years one of the leading iron manufacturers of this city. He was born in this city in 1816, and was educated in the public schools. When a lad he worked in the old Requa iron foundry in Desbrosses street, of which he became one of the heads when Mr. Requa retired. The business was conducted under the name of Farrin & McCullough for many years. Mr. Farrin retired from business 15 years ago.

Julius G. Pohle died in New York City on October 7th, aged 58 years. He was a chemist and also a mining engineer, and was well known in the West as well as in this city. Dr. Pohle went to Colorado early in the sixties, and became largely interested in silver mining, in conjunction with many well-known men. He was instrumental in opening up a number of silver mines in the vicinity of Georgetown, Colo., and also started mills and other industries. His ventures were not very successful from a pecuniary point of view, and after spending nearly 15 years in the West he returned to this city and became known as an analytical chemist and assayer. Of late he had been connected with the Ingersoll-Sergeant Drill Company, of New York.

SOCIETIES AND TECHNICAL SCHOOLS.

Canadian Society of Civil Engineers.—At the ordinary meeting in Montreal, October 10th, a paper entitled "A Few Questions on Railway Work," was read by Mr. J. G. Kerry. This was the first meeting of the season.

American Society of Civil Engineers.—At the meeting in New York, October 2, a paper by E. C. Moore, on "Moving Two 36-in. Water Mains Without Shutting Off the Water," was presented and briefly discussed.

Society of Chemical Industry, New York Section.—The annual meeting and dinner of this society were held in New York, October 7th, when a number of addresses were made. The president, Mr. A. H. Mason, made his annual address.

Engineers' Club of St. Louis.—At the regular meeting in St. Louis, October 2d, Albert Siebert and John Walter Taylor were balloted for and elected members. The president announced the death of Alex. E. Abend, and stated that Mr. Edward Flad had consented to prepare a memorial. The secretary announced the receipt by the library of a number of valuable publications. On behalf of the committee, Mr. Robert Moore then presented to the club the oil portrait of Col. Henry Flad, president of the club for the first 12 years of its existence. Mr. Richard McCulloch then read a paper on "The Continuous Rail in Street Railway Service." He described briefly the work done in St. Louis and elsewhere, and the processes employed. The discussion was quite general, being participated in by Messrs. Bruner, Crosby, Hermann, Ockerson, Wheeler, Moore, Captain McCulloch, Winslow, Laird, Baier, A. L. and J. B. Johnson, Sterne, Perkins, Flad, Professor Nipher and President Russell.

INDUSTRIAL NOTES

The Maryland Steel Company is preparing to start up two of its large blast furnaces at Sparrow's Point, Baltimore.

The Union Iron Works, of San Francisco, have secured the contract to build a 40-stamp mill for the Champion mine at Nevada City, Cal.

The Gould's Manufacturing Company, Seneca Falls, N. Y., reports sales of a large number of its triplex power pumps, including some very heavy pumps for irrigation and mining purposes.

The Fulton Engineering and Shipbuilding Works, of San Francisco, report sale of a 10-stamp mill to the Santa Rosa mine in Riverside County, and a 40-stamp mill and air compressor to the Zintgraf mine in Amador County.

The United States Car Company, Anniston, Ala., has put a force of men at work repairing a number of freight cars. This company now has in partial operation its machine shops, foundry and pattern shops, as well as the repair shops.

The Franklin Institute of Pennsylvania recently awarded the Elliott Cresson gold medal to the Pelton Water Wheel Company of San Francisco, as a recognition of what is regarded by them as a valuable product of American invention.

The Hendrie & Bolthoff Manufacturing Company, of Denver, has contracted to put in all the machinery required at the Boston & Cripple Creek mine. The steam hoister will be the same as the equipment of the Elkton mine, at Cripple Creek.

The Union Iron Works, San Francisco, are now constructing a passenger boat for service on Lake Tahoe, a twin-screw boat 150 ft. long, to accommodate 150 passengers. This vessel is to circumnavigate the lake daily, calling at various parts with mail and passengers.

The partnership heretofore subsisting between Messrs. William and T. J. W. Sargant has been dissolved as and from date of September 30th by mutual consent. Mr. T. J. W. Sargant will continue the business under the same style of W. T. Sargant & Sons as heretofore.

The Crum Creek Iron Works, in Ridley Township, near Chester, Pa., have been sold to a New York syndicate which will operate the plant to its full capacity. The works which in normal times employ about 100 hands, were idle for many months, but have been started with about 60 men at work.

The Union Gas Engine Company, of San Francisco, reports shipments as follows: 60 H. P. engine to Nye County, Nev.; 12 H. P. engine to Salt Lake, Utah; 6 H. P. engine to Sydney, Australia; 5 H. P. Marine engine to Tiburon, Cal.; hoisting plant to Grass Flat, Cal., and pumping plant to Santa Barbara, Cal.

The stockholders of the Woodstock Iron Works, at Woodstock, Ala., have authorized the giving of a mortgage for $250,000 worth of bonds, which will probably be issued to provide funds for the further improvement and repairing of the company's furnace, and for more working capital. The mortgage is to cover the entire property of the company, but will provide for the release of such lands as the company may desire to sell to colonists and others.

The Berlin Iron Bridge Company, of East Berlin, Conn., has just completed for the town of Hadley, N. Y., a bridge 300 ft. long and 16 ft. wide. The same company has also lately completed a new store-room for the Hartford Rubber Works, a new car-house for the Norwalk Tramway Company, at South Norwalk, Conn., and a new generator house for the Burlington Gas Light Company, at Burlington, Vt. Work is very brisk in all departments of the company's shops.

The Dayton Gas Engine and Manufacturing Company has recently sold one of its high-grade engines to the Stillwell-Bierce & Smith-Vaile Manufacturing Company, of Dayton, O., to be shipped to New Orleans, where it is to be used to run an ice plant manufactured and set up by the latter company. After testing several and, in fact, placing engines of other makes in their plants, the Stillwell-Bierce Company has finally decided upon the Dayton engine as the best for their purpose and will probably purchase a number of them.

TRADE CATALOGUES.

The Marvin Electric Drill Company, of Canastota, N. Y., has issued an attractive catalogue of Electric Percussion Drills and auxiliary apparatus. The company announces the establishment of an extensive plant for the manufacture of this apparatus, and intend carrying in stock a full line of drills in different sizes, as well as generators for their operation, insuring prompt shipments. The catalogue is fully illustrated and contains, in addition to details of the drills and generators, valuable information regarding the practical operation of electric drills, which have been in use for several years.

Catalogue No. 49 of the Ingersoll-Sergeant Drill Company of New York, is a handsomely illustrated book of 146 large pages, giving descriptions of the company's latest patterns of rock drills, stone channeling machines, quarry bars, gadders and special quarrying machines. It is not simply a reprint of an old catalogue with some new matter added, but is a new book with new tables and much information of interest to those engaged in mining and quarrying work. Especial prominence is given to quarrying machinery and to the application of the rock drill to quarry work, of which a number of instances and illustrations are given. Some late improvements in the air compressor are noted, and there are also illustrations of methods of shaft sinking and similar work. There is an illustrated description of the use of compressed air for pumping water by the Pohle method. The tatalogue will be of much service to miners, quarrymen and engineers, who can obtain it by applying to the company.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kin will notify the "Engineering and Mining Journal" o

what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling goods of any kind.

GENERAL MINING NEWS.

The "Derrick's" statement of new work in the oil-fields in September is as follows: New York, Pennsylvania and West Virginia field, 735 wells completed, producing 14,330 barrels daily; 1,246 wells in progress. Buckeye field, Ohio, 462 new wells, producing 9,175 barrels; 698 wells in progress. Southwestern Ohio field, 40 wells completed, producing 528 barrels; 59 wells in progress. Indiana field, 129 wells completed, producing 3,175 barrels daily; 186 new wells under drill.

Tennessee Coal, Iron and Railroad Company.—This company has formally concluded the sale of $440,000 De Bardeleben 6% bonds to the Moore & Schley syndicate. The price is 94. This transaction pays off the floating debt, and leaves the company with what is believed by its officers to be ample working cash capital.

ALABAMA.

Cleburne County.

(From Our Traveling Correspondent.)

Arbacoochee Mining Company.—Ex-Governor Smith has had a force of men engaged in prospecting Section 5, owned by the Arbacoochee Company. Hydraulic mining was done on this property some years since, but it is only recently that any systematic effort has been made to locate quartz bodies. Up to the present time three bodies of auriferous quartz have been cut on the property. Sufficient work has not been done to determine whether each of these is a distinct body or whether they show extensions of one body. The fact is that the formation in this district is faulted to such an extent that it is impossible to determine until further work has been performed, any material facts relative to the permanency and extent of the ore bodies discovered.

Heflin Gold Mining Company.—This company, which was organized in Chattanooga, a short time since to work Section 7 in the Arbacoochee District, has quite a large force of men actively engaged in prosecuting the work of prospecting this property more thoroughly. In a shaft sunk to a depth of 42 ft., a short distance south of the discovery made by the Hilton brothers, a body of heavy sulphuretted quartz has been encountered. Other bodies of auriferous quartz have been cross-cut at some distance to the southwest from this shaft. It is impossible to say whether these are extensions of the ore body discovered by the Hiltons or not. The ore taken from each of the openings is of a high grade, but becomes heavily sulphuretted at a shallow depth. The company has not yet decided on the process for treatment. However, I am informed that the probabilities are a stamp mill, with concentrating tables and barrel chlorination plant will be erected in the near future. One of the members informs me that it is proposed to send a shipment of ore to the Mecklenburg Iron Works at Charlotte to be tested in their sampling works. The question of title has been disposed off for the present. The Anniston Gold Mining Company, which disputed the location of the line between its property and Section 7, brought suit before a justice for illegal possession and retainer by the Heflin Company. After all the evidence was heard, the attorneys for the plaintiff accepted a non-suit. The evidence, as testified to by old residents, was to the effect that the line of the original government survey was located 9 ft. north of the original discovery by the Hiltons. The Anniston Company alleged that it had been in possession for over 10 years to a point about 60 ft south of this line. The claim was made that a fence built east and west had always been considered the dividing line between the two properties. But on the trial, the testimony of several witnesses was to the effect that the original proprietors had not claimed to this fence, but had always respected the government line as the dividing line between the properties. The fence had been located by mutual consent of the proprietors of both properties, because of the character of the ground along the line of the government survey being such as to render it very difficult to maintain a fence. Whether this will end the litigation or not, it is impossible to say, but the Heflin Company is in possession of all it claims.

Section 6.—T. H. Aldrich, of Birmingham, has resumed operations on the east half of Section 6, to the northeast of the Heflin Company's property. He has several men engaged in prospecting at different points, and has exposed auriferous quartz of good grade in several prospect holes.

ARIZONA.

The report of Gov. Hughes, of Arizona, to the Secretary of the Interior, made public last week, says that during the year ending June 30th Arizona was favored with a high degree of prosperity. The gold output for the year he estimates at $1,260,000, being an increase of $2,179,750 over 1894. The silver output was 1,750,000 oz., being a decrease in value of over $500,000. The copper production amounted, he says, to 849,661,289 lbs., valued at $6,207,611, and the lead output amounted to $350,000. The total value of bullion exports was $11,955,111. The present population of Arizona is placed at 77,000. The aggregate value of taxable property, as returned by the assessor for the year, was $27,518,332, being an increase over last year of nearly half a million.

Cochise County.

Herring.—These mines are located in Tevis district, and include a group of 7 locations. For years a large number of Mexicans have been working placers there, using dry washers with good results, selling the yellow metal at Willcox. Thus far only surface work has been done, the assays from which show good returns, running from 3 to 12 oz in gold per ton. The croppings stand out prominently and the ore shows free gold in quantities. The nearest point to water is 6 miles distant; however, transportation facilities are close at hand, the railroad being but 3 miles from the mines.

Yuma County.

Harquahala Gold Mining Company.—Pending the issue of the annual report and accounts, the directors have sent to the stockholders a circular detailing certain propositions now before them relative to the acquisition of other properties. The Harquahala mines have been exhausted, and future operations there will be confined to the treatment by cyanide of the large stock of tailings which it is expected will result in an aggregate net profit of about $100,000 in the next 18 months. In addition to this the company had on September 1st cash and liquid assets of about $65,000 apart from the mining machinery and plant which, however, is not of much value unless utilized in the New Mexico property under consideration. Mr. Henry Bratnober, one of the engineers who originally reported on the Harquahala mines, has offered to hand over to the company on the terms on which he acquired it an option to purchase two leases, aggregating about 27 acres on the Hannan's gold field, Western Australia, which contains, according to the directors, an extension of the Hannan's Reward lode. The option expires on October 19th, and the price is £3,400. Captain Vawdrey reported favorably on this property.

The directors have also had under their consideration a property known as the Bell & Stavens group of mines, at Pinos Altos, New Mexico, which had been favorably reported upon by Messrs. George U. Waring in 1893, Arthur L. Pearse in 1894, J. F. Blandy in 1895. These reports were submitted to Mr. Raymond, who was induced by them to visit and examine the mines and to subsequently cable a favorable report to the report to their board and recommend their immediate acquisition. Mr. Raymond estimates there are in sight and immediately available reserves of ore from which a net profit of $100,000 may be anticipated. The great drawback hitherto to the economical working of the property has been the want of water; this difficulty can be overcome by the introduction of water from a supply that exists 6 miles away. Mr. Raymond has secured an option over the necessary water rights and estimates the cost of bringing in the water, together with an increase of stamps and other necessary improvements, at $75,000. Upon the completion of these improvements he estimates that a monthly net profit of $12,000 to $15,000 may be anticipated. Mr. Raymond, in his report, lays stress on the fact that nearly, if not all, the plant machinery at Harquahala could be utilized for these mines. In order to confirm Mr. Raymond's report the board have arranged with Mr. C. A. Molson, the manager of the Elkhorn Mine, Montana, to examine the property on their behalf, and they are now awaiting his cabled report thereon. The purchase price of the property is $165,000, one-half payable in October, the balance in December. The directors have probably sufficient funds at their disposal to purchase, develop and work the Western Australian property, but to purchase and work the New Mexico property also further capital to the extent of at least £50,000 must be forthcoming, and the directors believe that the best method of raising this amount will be by a reconstruction of the company on the following lines:

The present company to be liquidated. A new company to be formed with a capital of £150,000 in 150,000 shares of £1. The new company to purchase from the old the whole of their assets for 60,000 fully paid-up shares, which will permit of an allotment of one fully-paid share in the new company for every five shares now held, and a balance of 2,000 shares to cover cost of liquidation, etc., £60,000. The new company to offer for subscription to the present holders in the first instance 60,000 shares or £60,000, leaving a balance for future issue of 30,000 shares, £30,000; total £150,000.

Should this proposition be carried out, the working capital of £60,000 so provided, together with the cash and liquid assets, say £13,000, taken over from the old company, would be disposed of as follows: Acquisition of the Bell & Stevens mine, say £34,000; machinery and improvements on same £16,000 leaving a balance for working capital and purchase and development of the West Australian property of: Balance of fresh capital, £10,000; cash and liquid assets from old company, £13,000; a total of £22,000.

There would also remain an unissued balance of 30,000 shares as stated above, which would be available for the further development and equipment of the Australian property and the acquisition of other claims adjoining the Bell & Stevens property, which latter purchase may hereafter be considered desirable. These assets would consist of: Assets and tailings taken over from old company; Bell & Stevens property and proposed improvements; plant and machinery at Harquahala, not valued but can be removed to, and will be a valuable asset when erected at Bell & Stevens: Grenfell leases, West Australia, not valued but of considerable and immediate market value.

The Board of Directors will not proceed with the reorganization until Mr. Molson's report has been received and is considered satisfactory.

CALIFORNIA.

Calaveras County.

(From Our Special Correspondent.)

Badger.—This mine at New York Bar, south of Copperopolis, has been shut down until next spring, having filled with water by an overflow from some dam above. The pumps are submerged, and several sections of the flume have been carried away. About $40,000 has been spent in developing the mine.

Bismarck.—This is the new claim located on the Seiffert Ranch, two miles from San Andreas, by John C. Seiffert and J. H. Beale. An open cut about 10 ft. deep has been run along the line of the vein for about 40 ft., showing ore which will average about $100 per ton. The development work will be pushed.

Mariposa County.

(From Our Special Correspondent.)

Virginia.—This mine, on the Mother lode, four miles southeast of Coulterville, has been leased by McKenzie, Hoxie & Donahoe, who intend to rebuild the old 10-stamp mill and start up the mine again. The fissure in this mine, which is 150 ft. wide, contains several bodies of quartz.

Nevada County.

Bald Mountain Extension.—The result of last month's run of gravel from this mine was 208 oz. of gold.

Kate Hayes Mining Company.—This company, of French Corral, has completed its restraining dam and commenced hydraulicking by permits of the California Debris Commission.

Live Yankee Gravel Mining Company.—This company has filed articles of incorporation. The directors are G. A. Singer, W. L. Mobley, Wm. McLean, P. S. Waldron, H. Dundon, E. W. Foss and D. King. The stock is divided into 25,000 shares of the par value of $1 per share. The Live Yankee is situated near Eureka.

Scadden Flat Mining Company.—The annual meeting of this company was held at Grass Valley, last week, and the following officers were elected for the ensuing year: James D. Hague, president; J. T. Morgan, treasurer; Fred Searls, vice-president; Thos. Marshall, secretary; C. E. Clinch and P. R. Robert.

Placer County.

Marguerite Mining Company.—This company, composed of San Francisco capitalists, has purchased the Salsig claim of 20 acres adjoining the Marguerite claim, near Auburn. Both are quartz properties, and the company is preparing for extensive operations.

(From Our Special Correspondent.)

New Treasure.—This mine is located in El Dorado Canyon, one mile southwest of Sunny South. Extensive development will be done during the winter, and a tunnel will be run several thousand feet to tap the blue lead known as the Golden River channel.

Riverside County.

(From Our Special Correspondent.)

Leon Gold Mining Company.—The Briggs' mine, 14 miles southeast of Perris, has been incorporated under the name of the Leon Gold Mining Company. Capital $100,000, of which $75,000 has been subscribed. New machinery is being erected. The shaft is down about 100 ft. in good ore.

Santa Rosa.—This mine, seven miles from Perris, has decided to add 10 stamps to the mill, which will increase the capacity to 50 tons per day. The main shaft is down 350 ft., and a double compartment shaft is being sunk on the ledge about 1,000 ft. south of the mill.

San Bernardino County.

Desert Queen.—The bond for the sale of this mine was filed on September 25th along with bonds for five other claims—the Chief of the Hills, Dry Lake Valley, Comstock Desert, Chief and Juniper. The claims have been bought by W. M. MacMillen, of Denver, for a price said to be $120,000. The first payment of $25,000 will be made October 16th. At that time the new owner will take possession. The balance will be paid in three equal instalments, one in January, one in April and the final one in July, 1896. It is provided in the contract that any gold that shall be milled after October 16th shall be deposited in the First National Bank at Los Angeles, which gold shall apply on the purchase price. The suits filed do not invalidate the sale of the claims.

Sonoma County.

(From Our Special Correspondent.)

A valuable and extensive ledge of verde antique and onyx comprising 20 acres has been located 11 miles west of Healdsburg on the summit of the mountain, by C. H. Swanson, F. H. Maderia, Geo. Maderia and Isaac Gray. The property will be developed at once.

Trinity County.

Gold Bug Mining Company.—This company has filed articles of incorporation at Salt Lake County,

the capital stock being fixed at $500,000, divided into 500,000 shares. The incorporators are: J. A. Brown, of Chariton, Ia.; J. C. E. King, P. E. Jones and L. B. Smith, of Salt Lake, and H. V. and J. W. Carter, of Callahans, Cal. The company will work the Blue Gravel, North Star, Green Mountain, Tangle Blue and Rattlesnake placer mining claims, located in the vicinity of the North Star placers, in which a number of Salt Lake people are also interested.

COLORADO.

Dolores County.

The following mineral surveys were approved by the United States Surveyor General for Colorado during the week ending September 28th, 1895: No. 9,643, Pueblo, Abe Lincoln; 9,710, Pueblo, J. M. Harden; 9,688, Durango, Blue Bell and Silver Bud lodes; 9,711, Del Norte, Silver Plume; 9,728, Pueblo, Park; 9,607, Denver, East Keystone, West Keystone, Montezuma, Bullion, Buckeye and Gold Cup lodes; 9 649, Leadville, Cleveland; 9,741, Pueblo, Nest Egg; 9,743, Leadville, Fairview; 9,694, Pueblo, Prophet; 9,665, Pueblo, Horace Arthur extension; 9,703, Montrose, Consolidated; 9,666, Pueblo, Nancy Hanks, Big Eagle and Red Fox lodes; 9,537, Leadville, Part of Chiefton; 9,718 (A. & B.), Denver, Quincy and Agnes lodes and the Quincy mill site; 9,639, Pueblo, Oxford; 9,749, Pueblo, Rosanna and J. A. P. lodes; 9,680, Pueblo, Fannie B., amended work (G. L. O.); 7,481, Pueblo, Half Moon and Harlan H. lodes; 9,107, Pueblo, Wheel of Fortune; 7,538, Pueblo, Wacu Weta; 4,117, Leadville, Emma Spratley.

Rico-Aspen Consolidated Mining Company.—This company has inaugurated an enterprise that will be of much benefit to Rico, says the "Sun." The Futurity tunnel, located on the western slope of Nigger Baby hill, will, when pushed to completion, tap the many veins owned by this company on Telescope Mountain at a depth of about 1,000 ft., and affords the means of extracting the large bodies of ore known to exist in their properties at a minimum expense. The company has already a force of men grading a wagon road and the site of the necessary buildings, and will put in a steam plant and air compressors. As soon as required it will build a wire rope tramway from the mouth of the tunnel to its smelter, and thus greatly lessen the cost of handling the ore extracted.

El Paso County—Cripple Creek District.

(From Our Special Correspondent.)

Anaconda.—These properties are being but slowly worked at present, the output being about 60 tons ore, which is sent to the Economic Reduction Works, at Florence. The railroad switch is completed under the ore-house.

Anchors.—Mine claims on Gold Hill have increased in value very much of late, the Maloney lease apparently having the cream. The shaft has been sunk 230 feet, and drifts are being extended both north and south. The north drift yields rich ore; recently two large samples of 50 lbs. each, taken across 12-in. face, yielded $33,800 and $23,400 per ton. The litigation between the lessees on this ground have been settled. The Hight and Snape lease, directly south, are shipping large quantities of ore from the 160 ft. shaft.

Blue Bird.—This property is being actively worked by lessees. The lessees on the north end have received returns from 8½ tons shipped recently which sampled 17 oz. This shipment was taken from sinking a shaft 67 ft. The vein was found at a depth of 18 ft. and is small, varying from 3 to 12 in., and is soft and easily worked. The rich portion of the vein was formerly a talc of a milky white color, in which the cubes of gold were found. At a depth of 60 ft. the talc became brecciated with quartz, which carries the value also, gold being seen in the quartz.

Bogart.—A shaft has been sunk 200 ft., and levels are about to be extended. The value of the vein is increasing. The claim is being worked under lease and bond.

Christmas.—The shaft is now down 119 ft. and is being sunk by six men. The vein was carried for 20 ft. to a width of 8 ft., when the superintendent deemed it too wide and a portion of the vein only is carried. The first-class or shipping ore yields about $75 per ton, and the milling ore about $30. Some rich specimens have been found within the past few days. A drift was extended north 45 ft. from the 70-ft. level. Additions are to be made to the sorting house.

Doctor.—The shoot of ore from which the $80,000 carload lot was shipped has been demonstrated to be 162 ft. in length and still in ore. Another car of over 20 tons was shipped last week of about the same grade. The shaft has been sunk 200 ft.

Elkton.—The third drift north was suspended some two weeks, as it was thought they had reached the boundary, but a joint survey this week showed that the drift was distant 30 ft. from the Katherine line. A sample across the drift assayed $83. From the shaft to the end there has not been a barren spot in the vein over 300 ft.

Independence.—The fifth level has been reached, and a station is being cut preparatory to drifting north and south. The surface improvements are keeping pace with the underground developments, as four boilers of 100 h. p. are to be erected, together with the largest compressor ever built in the State. The cost of such improvements will not be less than $30,000.

Isabella Mining Company.—The Buena Vista, owned by this company, is increasing its output. At a depth of 250 ft. a level has been extended 1,500 ft., and in the level there are three turnouts or meeting places for cars. A steam hoist is being placed on the Smuggler shaft, 1,000 ft. southeast of the Buena Vista; which will relieve the Buena Vista shaft of some of its overcrowded hoisting and give good ventilation.

Joe Dandy.—This mine, on Raven Hill, is now a regular shipper, and there are now 25 tons awaiting shipment, although two cars were shipped the past week.

Kalamazoo.—This claim, on the north slope of Bull Hill, has been a disappointment to its owners thus far. A contract was recently let to sink the shaft 150 ft. deeper on the vein. Some rich float has been shipped from the claim.

Katherine.—The shaft has been sunk 25 ft. and securely timbered below the 315 ft. level. The developments throughout the mine are reported to be very encouraging, especially the west crosscut from the 100 ft. level.

Lucky Guss.—The shaft has been sunk 345 ft. No stoping has been done below the third level. The fourth level is being extended north and south. The smelting ore is about 12 in. wide and samples from 6 to 8 oz. by carload lots; the second grade about 2 oz., which is treated locally.

Nighthawk.—This fractional claim, close to the Buena Vista, has been recently equipped with a steam hoist. A vertical shaft has been sunk 95 ft., but without striking mineral.

Orphan Bell.—This group is being worked by 16 different lessees, some of whom are earning good wages. Two steam hoists have recently been put in, and the third is in course of erection. One set of lessees recently abandoned their lease, another took charge, and stripped several tons of "supposed waste" by the former lessees, which yielded at the sampler $31 per ton.

Pharmacist Mining Company.—This company's mine is again being worked under the superintendency of William Trevanow, who is developing the property. A little ore has been found in the fourth level from a new vein. The north drift on the eighth level is being pushed ahead. The vein here is 8 ft. wide, but carries little value. The ninth level is also being driven.

Portland Mining Company.—The new shaft has been sunk 400 ft. A recent carload shipment from the Black Diamond sampled 18 oz. The output for August averaged 116 tons a day; for September 125 tons.

Raven.—The owners made an important strike during the week in the lower tunnel. In drilling in the west wall of the vein a deposit of ore was found 2½ ft. assaying from $25 to $68 per ton.

Rubie.—The daily shipments from this property are about 12 tons of ore, which averages from 3 to 4 oz. The shaft is being sunk below the 200 ft. The third level has been extended south 240 ft., and is in mineral the entire distance. The south drift on the fourth, or 200 ft. level, has been driven 30 ft. About 30 men are employed, 5 of whom are ore-sorters.

Sacramento.—This property on Bull Hill is shipping from its 70-ft. shaft a grade of ore yielding from 8 to 10 oz. A second shaft has been sunk to strike the vein and is now 45 ft. deep.

Victor Mining Company.—The new shaft has been sunk 280 ft. vertically. The old incline shaft has been discarded and the steam hoist removed, and all the hoisting is conducted through the new shaft. Over 100 men are employed.

Vindicator and Lillie.—These claims, on Bull Hill, are steady shippers. The shaft of the former is down 67 ft. and that of the latter 65 ft. The grade of ore is not high, about 3 oz. The rock in both shafts, which are not more than 35 ft. apart, is a telluride.

Lake County—Leadville.

(From Our Special Correspondent.)

Belgian.—The damage caused by the terrific explosion of giant powder in this property has been repaired and development work is being pushed forward. The lessees have a very good body of ore and are pushing down to explore the lower formations.

Bison.—This property shipped during September 3,500 tons of iron ore.

Golden Eagle Mining Company.—The stockholders met on Thursday and elected the following directors: J. H. Weddle, Geo. W. Skinner, P. W. Breene, R. J. Allison, A. S. Weston, J. C. Stillwell and R. B. Spaulding. At the directors meeting J. H. Weddle was elected president; George W. Skinner, vice-president; P. W. Breene, treasurer; R. J. Allison secretary.

The Lucky Weber.—The pumps are working satisfactorily and the shaft is down over 200 ft.

Turbot and Chip.—The opening up of these two properties in the city limits (located at the head of East Seventh street), marks a very important era in the history of mining in this camp, as it is the development of an immense territory heretofore untouched. The ore body opened in both claims lies in the second contact, and it is thought to be a continuation of the chrysolite ore and iron body. In the Chip the iron ore body has been followed over 50 ft., and it promises to be an immense chute. In the Turbot a body of iron mixed with lead has been opened up for 20 ft.

Yak.—This big tunnel, being run by the Yak Mining and Milling Company, is in over 5,000 ft., the head of the tunnel being in the Mike property and 600 ft. from the surface. At the Yak mill 100 tons daily of low grade sulphides are treated.

La Plata County.

(From Our Special Correspondent.)

Columbus.—It is reported that a large body of rich ore was encountered where the perpendicular shaft intersected the vein. Manager Wright showed some fine specimens of tellurium and free gold, but the exact value and extent of the strike is not known.

Durango Girl.—Al. Weiner & Co. shipped five tons of ore from this property, which, above smelting and transportation costs, netted $1,798.

Omaha & Grant Smelter.—There was a fire at the smelter in Durango on September 26th, which destroyed the new sampler building, the engine and boiler room, the drying house, ore bins, etc. The loss is estimated at $75,000, partly covered by insurance. The destroyed parts will be immediately rebuilt.

Pret & Trachsler.—This mill has been closed for the winter, it being impossible to secure ore enough to keep running. As a trial it ran long enough to prove that the bromination process is adapted for La Plata refractory gold ores.

Routt County.

(From Our Special Correspondent.)

Hahn's Peak Mining District.—Columbine camp contains within its boundaries many good prospects, and it is thought by practical mining men that there will be over 100 claims that will be shipping pay-ore the coming season. Up to the present many of these properties have been bonded and leased to practical mining men who have sufficient capital to develop and put them on a paying basis. In June last, when the discoveries were first made, the mineral belt was supposed to cover only a small area, but it has increased from week to week and at the present time extends from 8 to 10 miles west of the original discoveries. Practical miners now claim that they have discovered the source of the rich placers of Hahns Peak, Fourmile and Elk River. It is thought that the whole country along Elk River where the porphyry dykes and lime belts crop out will prove to be as rich as the original discoveries made at Columbine.

CONNECTICUT.

Litchfield County.

Spurr Quarry.—Some 40 men employed at this quarry near Lakeville struck recently because of a proposed reduction of wages from $1.75 to $1.50 per day. The work was stopped for a short time only, the men returning to work at the old rates.

FLORIDA.

De Soto County.

Peace River Phosphate Company.—This company reports its total output for the eight months ending August 31st, at 88,200 tons. The production for the full year 1894 was 108,345 tons, of which 83,817 tons were exported.

Marion County.

Agnew Phosphate Company.—This company has resumed work at its mines near Ocala. About 50 men are employed.

IDAHO.

Alturas County.

Red Cloud.—Another ore chute has been cut in this mine. It is not the vein on which work has been going on, but a separate ore body. A new cage is being put in the shaft.

Logan County.

Placer mining by means of a dredge pump is being carried on successfully on the Snake River near Minidoka, says the Boise "Statesman." The plant is the property of Sweetzer & Burroughs, cattlemen of that section. They put in the machinery last year at a point some distance further up the river from where it is now located. During the winter they drifted down stream, and started up in a new place this summer. The plant consists of a sand pump and burlap machines set upon a flatboat. The sand and gravel are pumped up from the bottom of the stream and run over the burlaps. The dredge works against the bank so that some of the material comes from the bottom of the river and some from the bank.

Owyhee County.

De Lamar Mining Company.—The company's report for August shows the usual amount of new work and prospecting. In the mill the table of work performed for August is as follows: Dry ore crushed, 3,618 tons. The assay value of the pulp was $27 35, of which gold was $18.48, and silver, $8.87. The assay value of the tailings was $5.21, showing a saving of 80·95%. The gold produced was 2,009·6 fine oz.; the silver, 50,141 oz. The value of gold produced was $40,192, and of silver, $30,085. The ore shipped during the month was valued at $5,500; surplus on sales of bullion, $4,814; miscellaneous revenue, $636; a total of $81,227. Expenses for the month were $41,668, leaving a balance of $39,559 as profit for the month. The installation of a 50-ton plant for the Pelatan-Clerici process having been decided on, the necessary excavations are in progress, and orders placed for the lumber and machinery to be used in the construction. Several good showers have materially increased the water supply.

ILLINOIS.

Bureau County.

The 600 coal miners of Ladd, who went out on a strike last week, have returned to work, having

gained their point. The price now will be 69c., and a further agreement is that another rise of 10c. a ton will be granted on January 1st.

Spring Valley Coal Company.—Mine No. 1, of this company, at Princeton, one of the largest coal mines in the State, is on fire, and fears are entertained that it will be entirely destroyed. The loss on October 8th was placed by the company at $30,000, and this sum may be greatly increased.

Peoria County.

All the miners, about 200 in number, employed in six coal minesalong the line of the Peoria & Pekin Union Railway quit work on October 1st because they were refused an advance from 40 to 51c. per ton.

Sangamon County.

Last week the coal miners in the Springfield district notified all operators that 40c. per ton and gross weight must be paid October 7th, or a general strike would occur. All operators excepting three promptly notified the miners that the price would be paid. The three mines holding out will probably agree to pay the demanded price.

Wabash County.

After nearly 10 days of conference, a meeting attended by representatives of practically all the Wabash mines that ship coal to Chicago, an advance of about 15c. a ton was settled upon last week. Further than this, a strong arrangement was made providing that all should refrain from cutting prices and work in harmony. This agreement, it is alleged, was brought about by railroad influence, or at least was greatly assisted by it.

INDIANA.

Northern Indiana Oil and Gas Company.—This company has sold its possessions in Wells, Adams and Jay counties to a Chicago syndicate for $300,000. The property includes leases on 6,000 acres, with 180 completed wells, with a daily production of 1,000 barrels.

IOWA.

Mahaska County.

Coalfield Coal Company.—This company is now preparing for work, locating shafts, etc. The company has 1,500 acres of coal lands leased for 20 years. The quality is very good. As rapidly as possible arrangements are being made for sinking and timbering a shaft installing a hoisting plant for active mining.

Oskaloosa Coal and Mining Company.—This company is starting all its shafts which have been idle in the past year and taking on more men at the working shaft. If the company succeeds in getting the men it wants it will have 500 working soon.

Polk County.

The miners of Polk County held a delegate meeting on October 5th, and called a mass convention for the 10th. All the sentiment of the delegates was favorable to a general strike, and it looks as if one will be ordered unless the rates asked a week ago, based on an advance of 10 cents per ton, are granted.

MICHIGAN.

Copper.

Atlantic Mining Company.—The output for September was 253 tons against 216 tons in August and 242 tons in 1894.

Centennial Mining Company.—It is said that stockholders generally are agreeing to the plan of reorganization.

Quincy Mining Company.—The product for September was 851 tons against 850 tons in August and 800 tons a year ago.

Osceola Mining Company.—The retimbering of No. 3 shaft will require about three months to complete, it is said.

Tamarack Mining Company.—Late advices say that at the point where stoping is now being done the vein is about 26 ft. wide.

Wolverine Mining Company.—The output for September was 83 tons against 81 tons in 1894.

Iron—Marquette Range.

Volunteer.—This mine at Palmer, 6 miles south of Negaunee, of which Gen. Russell H. Alger is the principal owner, is cleaning up its stock piles, and the mine will be unwatered and active mining resumed before the close of the year. The Volunteer employs over 300 men when running at full capacity.

Iron—Menominee Range.

From 12,000 to 15,000 tons of ore are being shipped daily from the Ishpeming mines. Nearly 850,000 tons have already gone forward by lake and rail this season. The shipments are hampered by lack of ore cars and vessels. The Ishpeming mines are now employing within 500 men of the number before the strike, and additional hands are being put on daily at all the mines.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

JOPLIN, Oct. 7th, 1895.

The past week has been another of enforced idleness in many of the deeper mines, but pumping is being vigorously carried on, and the water is gradually decreasing. The output continues light, and the price is fairly well maintained. The highest price paid was $26.50 per ton for zinc ore, though only one lot brought that figure, the average being between $25 and $26, with low grades ranging rather higher than usual. Lead ore sold at the smelters for $18 per 1,000 lbs. The output for the week was as follows: Joplin, zinc, 768,040 lbs.; lead, 292,230 lbs.; value, $14,256. Webb City, zinc, 807,310 lbs.; lead, 36,730 lbs., value, $10,372. Carterville, zinc, 1,001,800 lbs.; lead, 145,420 lbs.; value, $14,587. Oronogo, zinc, 8,870 lbs.; value, $701. Zincite, zinc, 12,570 lbs.; value, $155. Spring City, zinc, 21,030 lbs.; lead, 17,000 lbs.; value, $558. Aurora, zinc, 546,000 lbs.; lead, 30,000 lbs.; value, $5,316. Springfield, zinc, 55,000 lbs.; value, $660. McDowell mines, zinc, 30,000 lbs.; lead, 2,000 lbs.; value, $300. Galena, Kan., zinc, 2,230,000 lbs.; lead, 400,000 lbs.; value, $29,400 Total for the district, zinc, 5,482,620 lbs.; lead, 926,380 lbs ; value, $75,705.

Victor Mining Company.—Mr. Joseph Aylor, of Webb City, has been appointed receiver for this company. The assets are, as mentioned in these columns last week, the remains of the machinery, the unexpired three years of the lease and the insurance. The liabilities are about $20,000.

MINNESOTA.

(From Our Special Correspondent.)

The old French River Mining Company, of Cleveland, O., of which Henry B. Payne is president, has put a drill crew at work on its long abandoned copper explorations at French River, 14 miles down the shore of Lake Superior from Duluth. Much mass and native copper was found on the property in the early sixties, and it is now proposed to see if the finds may be developed into mines. The same parties are owners of copper lands at French River, Sucker, Knife and Split Rock, all streams on the north shore of the lake, near Duluth.

Iron ore shipments from Lake Superior for September were 1,050,000 tons, and for the year to October 1, 5,842 000 gross tons. About 2,200,000 tons in addition to this has gone from Escanaba to lower lakes, making the total ore movement to the first of the present month about 8,000,000 tons. It is likely that nearly 2,000,000 tons additional may be sent out, but the high figure to which vessel rates have gone—$1.60 per ton from Duluth—may have some effect in lessening the movement. Two Harbors and Duluth, the latter including what has been shipped from Superior, have sent out during the season 1,720,000 and 1,400,000 gross tons respectively. From now on shipments will be very much lighter from both ports.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Commodore Mining Company.—This mine has suffered from water, but with an additional pump from the Franklin, it has been unwatered this week. The shaft is 120 ft. deep, and drifting will begin at once. At the other Corrigan, McKinney & Company mines, in the immediate vicinity of the Commodore—the Franklin, Bessemer and Victoria—work is going as actively as ever.

Elba Iron Company.—This company, an offshot of the Minnesota Iron Company, which purchased the so-called Pittsburg lands, in section 34-58-17 for $100,000, forming the Elba out of them, will be actively developed the coming winter for extensive mining operations in 1896. The property is located three miles east of Eveleth and is an excellent one, containing very large deposits of ore of excellent grade.

Lone Jack Iron Company.—The Lake Superior Consolidated has settled the suit brought against it by this company for $84,000 on the ground of fraud, for about $60,000, leaving no suits for misrepresentation against the Consolidated unsettted, except those of the Merritts, and these, it is predicted, would have been settled before this but for the number of claims that might follow one settlement.

Lake Superior.—At the newly explored property of this company, west of Hibbing, ore has been drilled to a depth of 280 ft., the quality being very high. On this property shafts will be sunk and mining operations carried on the coming winter. The properties of the company are operated by the Lake Superior Consolidated, under lease.

Mountain Iron.—This mine now has two shovels in ore and is shipping 140 cars, or 3,000 tons, a day. Two shovels are also stripping, and the 22 acres of ore uncovered and ready for mining will be largely increased by next spring. Most of the work now being done is on the Rathbun part of the mine.

Norman.—This mine has stopped shipments for the season, but indications are for active work underground. A new drill hole was started this week. The mine turned out 30,000 tons in September.

Oliver Mining Company. — This company has shipped so far this season 500,000 tons of ore, and will make nearly 600,000 tons for the year. The Lone Jack has shipped all but about 125,000 tons of this, and on Lone Jack Ore the company pays the Lake Superior Consolidated 25c. a ton royalty. The same company is preparing to make a mine out of the Sheridan property, at Hibbing, for which it paid $80,000 a few mouths ago. It will be stripped for open pit steam-shovel mining, and will be one of the most favorably located mines on the range for cheap and effective work.

Sellers.—This mine has suspended shipments because of the high freight rates. It will be very active underground all winter in preparation for a very much larger output next season.

Iron—Vermilion Range.

(From Our Special Correspondent.)

Minnesota Iron Company.—Explorations on the the Armstrong Lake property under option to this company, are very satisfactory, and a large body of ore is being shown up. The company this week began explorations on the Whiteside property, at Ely, where there are good indications.

MONTANA.

A conference, called at the suggestion of the State Mineral Land Commission, to discuss the classification of the lands in the Northern Pacific grant in Montana was held recently in Helena. Those present were: Senators Lee Mantle, Thomas H. Carter, Commodore Thomas C. Power, Maj. Martin Maginnis, State Senator Leonard, of Butte, William B. Tompkins and Frank M. Leonard, of the Missoula Commission; A. W. Campbell, of the Bozeman Commission; Lyman E. Barnes, Edward H. Movius and Miles Cavanaugh, of the Helena Commission; Thomas G. Merrill and George W. Irvine, of the State Commission; Tom Cooney, representing the Northern Pacific Company, and J. Rombauer, of Philipsburg. The principal subject discussed was what legislation is needed to make the present classification law most effective. It was suggested that the work could be greatly advanced if a United States Deputy Surveyor and such assistants as may be needed could be appointed to assist each commission. It was urged, also, that provision should be made for recording in the United States land office or such other office as would be appropriate, the classification of the lands when it became conclusive. The discussion was entirely informal. Plans for the future were considered, and the extent and nature of the work already done was dwelt upon. Chairman Barnes, of the Helena Commission, gave some interesting figures relative to the cost per acre of classifying lands in his district. The Helena Commission has examined 219,630 acres, 59,250 of which are classed as mineral and 100,400 as agricultural lands. Counting every expense to the government, the cost per acre to classify has been but 2¼c. Excluding the cost of advertising, which under any system of classification would be necessary, the cost per acre has been but 1.8c. The commissioners expect to reduce this estimate if they continue work next year. Much of the work this year has been in rugged country which made progress slow.

Jefferson County.

Elkhorn Mining Company.—This company's detailed report for August shows the usual amount of prospecting work. The ore raised was 1,171 tons. Ore sold amounted to 17·2 tons, netting $902, the average value being $52.37 per ton. The mill statement shows 1,163 dry tons panned. The average assay value was 36·74 oz.; the value of tailings 3·67 oz., showing 91·2% saved. The batteries were in service 29 days and the pans 30 days. The product was 32·5 fine oz. gold and 41,603 oz. silver. The value of bullion shipped was $27,025; ore shipped $902; excess on July shipments, $104; making a total of $28,031. The current expenses were $21,438, leaving a balance of $6,593 as profit for the month.

Meagher County.

Son of Erin.—Ore has been struck on this claim after driving about 150 ft. of tunnel. The vain is wide and carries lead and silver.

NEBRASKA.

Seward County.

A press dispatch from Lincoln reports considerable excitement over a discovery of placer ground about 25 miles west of that city. Three miles from Milford, a small pleasure resort on the Blue River, an old gravel pit, out of which the Burlington Railroad has for years been ballasting its tracks, has, it is reported, been found to contain gold. Sand and gravel from several adjacent farms have also shown gold, it is claimed.

NEVADA.

Nye County.

Sterling Gold Mining and Milling Company.—This company is now in peaceable possession of the mines and both the old and new mills are operating.

Storey County.

Brunswick Exploration Company.—The latest weekly official letter from the superintendent says: Shaft No. 1, on Hale & Norcross ground, near the Chollar north boundary, has been sunk for a total distance of 149 ft. on the incline; formation of quartz and porphyry showing some value. Shaft No. 2, on the boundary of the Consolidated California & Virginia and Best & Belcher mines, has been sunk for a total distance of 101 ft. on the incline; bottom in porphyry. Tunnel No. 1, on Savage ground, started at point 75 ft. north of Sutro tunnel shaft No. 3, has been extended 24 ft., passing ghthrou hard porphyry and quartz; total length, 346 ft.

(From an Occasional Correspondent.)

A drainage canal is now being driven in the "Como" district that will tap the ledge at a depth of about 500 ft., and will open up a large district. The Como was a prosperous district when the Comstock was practically undeveloped, but was overshadowed by the latter, and when the water level was reached was abandoned on account of the cost of drainage.

Storey County—Comstock Lode.

Hale & Norcross Mining Company.—At a special meeting of the directors of this company, held in San Francisco last week, it was decided to have some 300 tons of good ore, accumulated in the bins at the mine worked at the Brunswick mill, and that

will begin to crush the same on October 15th. Pending the receipt of bullion from this crushing, arrangements have been made to borrow sufficient money from the Nevada Bank to pay the expense of the mine and thus avert any immediate necessity for levying an assessment.

NEW BRUNSWICK.

Northern New Brunswick Mining Company.—This company has been at work all this season on a property which it controls near Andover, on the Serpentine stream, a branch of the Tobique River. Some prospecting has been done for gold ore, and the company has bought and put up a small stamp mill.

NEW JERSEY.

Morris County.

Wharton Iron Ore Company.—Six men—the engineer, fireman and four miners—were badly injured by the explosion of a boiler in this company's mine at Hibernia on October 8th. Damage estimated at $10,000 was done to the engine house and mine buildings.

NEW MEXICO.

Grant County.

The work of repairing the Silver City & Northern Railroad, which suffered so severely during the late floods, is going on, says the Silver City "Sentinel." The line has not been operated since July 9th. Its rebuilding means much to the iron mines of Hanover and the smelting men of Ivanhoe. It has been almost impossible to do any work on these valuable properties since the closing down of the road. The smelter has a great amount of matte ready for shipment as soon as the road can be put in readiness to receive and handle it. There are hundreds of tons of valuable iron ore also awaiting transportation.

Ivanhoe Smelter.—This smelter, which was closed down for a few days for the purpose of re-lining the furnace, was blown in last week. The company shipped 2 carloads of matte to Canon City, Colo., a few days ago, and now has another carload ready. Contracts have been made by which no shortage of ore may occur and the smelter will in future run at full blast. They are now treating 30 tons of ore per day and employ a force of 22 men.

Mineral Point Zinc Company.—This company, at Hanover, is again working its mines. Wm. Swancoat, the superintendent, has 8 men at work, and a large shipment will be made to Mineral Point, Wisconsin, as soon as the Silver City & Northern Railroad is opened up. These mines have been closed down for a long time.

OHIO.

Workers of Ohio have appointed M. D. Ratchford, of Massillon, and Secretary Pearce, of Corning, to go to Pittsburg with J. S. Morton and H. L. Chapman, of the operators, there to determine what advance has been granted. This sub-committee will report to the full committee at Columbus.

OREGON.

Oregon Improvement Company.—This company, an extensive owner and operator of mines, railroads, and steamboat lines, is in the hands of a receiver. Judge Hanford, of the United States District court at Seattle, Wash., made the appointment, naming C. J. Smith upon application, through the local counsel of the Farmers' Loan and Trust Company, of New York. Mr. Smith has for several years been the general manager for the company. The receiver gave bonds in the sum of $100,000. The application for receiver was based upon the Oregon Improvement Company's failure to pay the interest due upon consolidated bonds due October 1st.

A committee of well-known New Yorkers, consisting of Messrs. Henry Hentz, Stuart G. Nelson, Francis Peabody and B. F. Tracy have issued the following circular to the consolidated mortgage bondholders and stockholders: The company has defaulted in the payment of the interest on your bonds, due October 1st. The large payments that are necessary to be made by this company for interest and for sinking fund on the first mortgage on December 1st, make it of vital importance that the consolidated bondholders and stockholders should take immediate action for the protection of their property. We have been asked by the holders of a large amount of the consolidated bonds and stock to act in their interest. You are requested to send to the Farmers' Loan and Trust Company, New York, the amount of your holdings and your address. It is intended to present a plan for the protection of your interests at an early date.

Another circular to the bond and stockholders, signed by John G. Moore and T. Jefferson Coolidge, of Boston, Mass., and John I. Waterbury, Henry W. Cannon, Edwin S. Hooley and Jules S. Bache, of New York, has also been sent. It invites holders of first mortgage bonds, consolidated mortgage bonds and stock to deposit the same with the Manhattan Trust Company, New York, or the Old Colony Trust Company, Boston, under a preliminary agreement, copies of which may be obtained from either depositary. Certificates of deposit will be given, to be listed as soon as possible on the exchanges in New York and Boston. The agreement provides that any depositor may withdraw his securities without charge if he is dissatisfied with the plan when issued. In view of the suits lately begun by the trustee under the consolidated mortgage, it is important that deposits be made at once.

PENNSYLVANIA.

Anthracite Coal.

A press dispatch from Hazleton says that the situation about the mines in the region are promising. The announcement was made on October 8th that the Lehigh Valley Coal Company's Hazle mines would start up on October 15th. This is the colliery where a fire broke out in January, and for a time threatened the destruction of three other valuable openings. Orders have been received at the Gower, Deringer and Oneida collieries to work full time. It is expected that Dick & Company's mine, stripping contractors, will have everything in readiness to start the new stripping at Jeansville next week. A water line to the stripping was completed on the 8th. The Ebervale and Harleigh mines will be opened up in a week or so for shipping.

Dorrance.—An explosion of gas occurred at this colliery at Wilkes Barre on October 7th. There were only nine men at work in the mine at the time, and six were fatally injured. The colliery is owned and operated by the Lehigh Valley Coal Company. It was started 14 years ago, and has two shafts. One was sunk to the Baltimore vein to a depth of 1,070 ft., and the other to the Hillman vein to a depth of 540 ft. The mine is known as one of the most gaseous in the region, and several explosions have occurred there within a few years. The cause of the explosion is not known positively.

Ebervale.—On October 6th the Ebervale mine, for the first time in eight years, was explored. Messrs. Mulvey and Garvey climbed down the slope and reached the bottom of the third lift. They found the timber in a fair state of preservation. The east gangway was open and apparently in as good a state as the day on which the flood came in. The successful drainage of these mines is due to the Jeddo tunnel. It is expected that 5,000 miners will be given employment as soon as the mines are thoroughly opened.

Bituminous Coal.

Osborne & Saeger Coal Company.—Three mines owned and operated by this company at Smithton have closed down because the firm refused to pay the advanced rate.

Oil.

The Mellon Pipe line reports that the South Pennsylvania Company's No. 1 on the Miller-Martin farm, in the Dye-Brooks field, which came in early last week, is still keeping up the great output of 500 bbls. a day. The John Rockwell No. 2, which was reported dry, is now said to show a fair production. The Campbell-Knoke well is dry and shows but little gas. The tanks have been placed in position at the Plum Run well, in Ritchie County, W. Va., and it will now be drilled in for all that is in it. A good well was drilled in on the Morris, Tarleton, Patton & Co.'s lease in the Cairo field last week, and the indications are that it will yield 80 bbls. a day.

TEXAS.

Cherokee County.

New Birmingham Land and Iron Company.—John R. Reagan, of Rusk, Tex., has been made receiver for this company. The company has 2,000 acres of iron ore land and a 50-ton furnace at New Birmingham. The furnace has been for two or three years idle, and the object of the receiver is to start the furnace as soon as the necessary repairing can be done.

UTAH.

Beaver County.

Chloride.—The high-grade silver and lead ores recently encountered in the shaft of this property, located in Beaver Lake district, continue to improve as sinking is prosecuted, and the ore body continues to widen, and the entire bottom of the shaft is in ore. The shaft, which is vertical, is now down to a depth of 57 ft. from the surface, and, according to the Salt Lake "Tribune," the vein stands at the same angle as the shaft. At a depth of 50 ft. the wall on one side of the shaft sounded hollow to miners in their work, and when a shot was put in it revealed the existence of a cave which appeared to be filled with ore. The ore seems to average quite high, assays having shown 80% lead and 160 oz. of silver, but the latest report was to the effect that the cave had not been explored for more than 5 or 6 ft. from the discovery.

This disclosure of the existence of caves in the formation leads to the belief that the formation of the Beaver Lake deposits is nearly identical with that of the district in which the amous Cave mine is located, although the latter is ocated 35 miles to the southwest of Frisco, while Beaver Lake is as many miles to the northwest. The Cave mine has been a succession of caves, or holes, in the formation, each one of which is a pocket of loose ore. A prominent distinctive feature, however, is that in Beaver Lake the vein crops out regularly, and good assays have been obtained from samples taken over a large area of the surface.

Horn Silver Mining Company.—The annual meeting of the stockholders of this company was held in the office of the company in Salt Lake City on October 1st. Out of a total of 400,000 shares, 315,393 were represented, and the old board of directors was re-elected, as follows: Allan C. Washington, Juan M. Ceballos, Bache McE. Whitlock, Theodore B. Moore, John Sharp, F. W. Jennings and P. T. Farnsworth. The officers are: Allan C. Washington, president; Juan M. Ceballos, vice-president; Ambrose I. Harrison, secretary and treasurer, and P. T. Farnsworth, manager.

Salt Lake County.

Sunshine Gold Mining and Milling Company.—This company has filed articles of incorporation with $2,500,000 capital, divided into shares of $10 each. The company owns the Sunshine, Gold Point, Lost Link and Excess mining claims in the Camp Floyd district. The officers are James E. Schwartz, president, William A. Sherman, vice-president; Frank H. Officer, secretary and treasurer.

WASHINGTON.

Snohonish County.

Monte Cristo Mining Company.—This company is making a survey for a ditch to bring the water from Glacier Creek to use in the concentrating plant.

WYOMING.

Albany County.

(From Our Special Correspondent.)

Douglas Placers.—Great interest is being taken in this district, some 35 miles southwest from Laramie City on the Wyoming and Colorado line. It is thought that this district will in the spring become a rival to the famous Fourmile placer fields, situated some 75 miles further west.

Fremont County.

(From Our Special Correspondent.)

Caresa.—The lessees of this mine at South Pass have made another clean up of 175 oz. of gold. The lessees are so well pleased with the season's work that they will continue during the winter, and are now making arrangements for that purpose.

Emil Granier.—J. C. Edwards, president; Mr. A. Kendall, treasurer, and Frank A. Hinman, manager, of the Rock Springs Placer Co. of Fourmile, Colo., have leased the property known as the "Emil Granier" Works, near Atlantic City. Mr. Hinman, manager, is now on the ground putting the property in shape for active operations. Over $900,000 is reported to have been spent upon this property under the former management.

Laramie County.

(From Our Special Correspondent.)

Fairview Mining Company.—This company at Silver Crown shipped two cars of ore to the Denver smelters. The ore body is holding its own (4 ft.) as depth is attained, and the owners are highly gratified with the outlook.

Sweetwater County.

(From Our Special Correspondent.)

The company now boring for oil at Green River was successful in reaching it at the depth of about 550 ft., but the amount was so small that they decided to continue sinking, believing that there were richer strata at a greater depth.

Uinta County.

(From Our Special Correspondent.)

Cokeville Onyx Deposits.—A new enterprise is being developed at this point that bids fair to become an important factor in the industries of the State. It is the discovery and development of a large deposit of amber onyx. The company are now taking out slabs 4 × 2 ft., but expect to take out much larger slabs in the near future. The amber contains all kinds of figures imaginable. The company are taking out some very fine-veined white onyx, and also some cream onyx that is very handsome, showing half a dozen different colors and figures when polished. The company will ship a carload of finished onyx, October 5th inst., to be used in the Y. M. C. A. building in Chicago. The company expect to make this one of the greatest enterprises in Wyoming. The company has its general office at 225 Dearborn street, Chicago, and the officers are Clarence B. White, president; J. M. Van Orsdel, treasurer, and C. R. Van Orsdel, secretary.

FOREIGN MINING NEWS.

BRITISH COLUMBIA.

(From Our Special Correspondent.)

The mining laws of this province have from time to time undergone many changes and the disposition to make alterations which are not always improvements has been a feature of the legislation, though it is generally admitted among mining men in the province that on the whole the mining laws of British Columbia are liberal and in some respects—for instance as to the size of a claim—too liberal.

Much of the litigation that is likely to arise will be due to the preliminary work of "staking out claims," which, considering its importance, is too often done loosely. A decision recently given by Judge Spink in this district threw both parties out of court because of certain irregularities in the preparatory work of staking out.

The area of British Columbia is estimated at 300,000 square miles at least. This year has witnessed great activity in the West Kootenay District and also in older districts, like Cariboo. There has been increased activity in dredging on the South Thompson, while last spring there were unusually stirring times in the old mining town of Yale. The introduction of modern methods of mining into those older districts has given an impetus to the mining industry, while the developments at Alberni, but a comparatively short distance from Victoria, on Vancouver Island, have extended the range of the mineral industry to the utmost western limits of the province.

Iron Horse.—This is one of the promising mines in the immediate vicinity of Rossland. The managers recently made a trial shipment of ore to the Tacoma smelter. It is intended to make other shipments of ore to Tacoma, Everett and Great Falls. The assays run from $37 to $96 in gold. Recent explorations in the mine have exposed the hanging walls, showing from 12 to 16 in. of clay between the walls and the lead. The separation is complete.

Kootenay.—One of the largest mining transactions of this y ar is that reported of the Kootenay. Philip Aspinwall a few days ago received from A. E. Humphreys, who represents a company that recently purchased this mine, the sum of $40,000. This sum was in payment for Mr. Aspinwall's two-thirds interest in the Kootenay.

Le Roi Mining Company.—This company last week declared a dividend of 5% or $25,000, the results of six months' work.

MEXICO.

Chihuahua.

Don Enrique Mining Company.—This company has issued a circular to its stockholders setting forth the unfavorable condition of the company. About a year ago the company owed about $53,000 in this country and about $33,000 was due creditors in Mexico, who were pressing for payment. In this emergency the Banco Minero of Chihuahua paid the Mexican indebtedness, taking the title to the properties as security. Interest rate was 12%. A portion of this loan will become due December 1st, 1895. To provide funds to pay this and other debts the company requests stockholders to subscribe to $200,000 one-year 6% notes. Nearly half the proceeds will go to pay the company's indebtedness and the remainder will be necessary for new machinery, plant, etc.

ONTARIO.

(From Our Special Correspondent.)

Dominion Gold Mining and Reduction Company.—The new 10-stamp mill of this company has just started up, on what is believed to be rich ore, but no clean up has yet been had. It owns and is developing 3 properties, Sultana, jr., Black Jack and Gold Hill, the new mill being on the latter.

Regina.—W. G. Motley, manager of the Regina mine at Whitefish Bay, Lake of the Woods, has brought to Rat Portage and shipped to England the mine's first gold, about 112 oz. This was the result of 12 days run of the 10-stamp mill. The first retort, which proved to be 23 oz., has been promised by the company to Rat Portage as a starter for a hospital fund. The main shaft of the mine is now down 65 ft., and a drift has been driven 100 ft. The vein has been gradually widening and is now 5 ft. wide, showing considerable free gold. The walls are well defined and the ore is all pay rock. O. F. Purnell, of Deadwood, built and started the mill.

Sultana.—This mine in Lake of the Woods district, is turning out more gold than before. Last week's output was 103 oz. To date the mine has produced $98,000 in bullion. The main shaft is down 225 ft. with 400 ft. of drifts. The ore averages $15 to the ton, but the rock is very hard.

Wiley.—This mine on Lake Harold, Seine River, is to put in 5 additional stamps this winter, doubling the present capacity.

LATE NEWS.

The Alaska Treadwell Gold Mining Company reports the clean-up for the month of September as follows: Period since last clean-up, 31 days; bullion shipment, $80,250; ore milled, 22,849 tons; sulphurets treated, 403 tons. Of bullion there came from sulphurets, $24,255. The gross expenses were $22,583, leaving a balance of $57,667 as profit for the month. The superintendent also states that they have struck the vein on the 220-ft. level in the proper place; it looks very well.

The first annual convention of the Northwest Mining Association, at Spokane, Wash., which was announced in the "Journal" some weeks ago, was attended by about 300 delegates. After the formal opening declaration of the aims and objects of the Association at the meeting and the adoption of a constitution and by-laws, the following permanent officers were elected: G. B. Dennis, president. A. P. Curry, first vice-president; L. K. Armstrong, secretary; F. L. Kershaw, assistant-secretary; W. J. C. Wakefield, treasurer. Provision was also made for the following committees: Judiciary, Finance, Transportation, Membership, and an Executive Committee to be composed of a vice-president from each district and county in the States of Montana, Oregon, Idaho and Washington, and the province of British Columbia, besides 11 extra members to be selected at large by the president. The following named gentlemen addressed the meeting after an able address by the president: Judge F. H. Ganahl, Hon. Chas. F. Fishback, Hon. W. H. Doolittle, Hon. S. C. Hyde, Hon. Fred. Dubois and Attorney General W. C. Jones. Besides these speeches, the meeting was addressed by several of the delegates on pertinent subjects and after the evening session of the second day, the members adjourned to the fruit fair in a body, where final adjournment was taken until next year, when the second annual convention will be convened in October, in the city of Spokane, Wash.

COAL TRADE REVIEW.

New York, Friday Evening, Oct. 11.

Production of Bituminous Coal, in tons of 2,240 lbs., for week ending Oct. 5th, and year from January 1st:

Shipped East and North:	—1895.— Week.	Year.	1894. Year.
Allegheny, Pa.	38,375	2,751,472	886,617
Beech Creek, Pa.	†45,975	‡1,973,775	1,468,950
Broad Top, Pa.	§	§	272,690
Clearfield, Pa.	827,350	4,683,906	1,903,877
Cumberland, Md	70,073	2,496,219	2,183,096
Kanawha, W. Va.	†76,100	†2,379,062	1,985,392
Phila. & Erie R. R.	825	42,055	55,732
Pocahontas Flat Top	§	§	2,555,617
Total	1,058,692	14,426,489	11,292,901

† Week ending Oct. 7th. § Returns not received.
‡ Week ending Sept. 21st.

Shipped West:	—1895.— Week.	Year	1894. Year.
Monongahela, Pa.	21,225	628,056	522,179
Pittsburg, Pa.	59,300	1,437,103	1,050,328
Westmoreland, Pa.	37,900	1,435,706	1,199,178
Total	98,425	3,500,865	2,771,685
Grand total	1,157,123	17,927,354	14,063,686

Production of coke on line of Pennsylvania Railroad for the week ending Oct. 5th, 1895, and year from January 1st, in tons of 2,000 lbs.: Week, 121,257 tons; year, 4,327,515; to corresponding date in 1894, 2,403,550 tons.

Anthracite.

The best feature of the anthracite coal trade today is that prices are really firm. They are not yet high enough for the profits of sellers to be great enough to offset the losses sustained during the first 8 months of the year and, indeed, it must not be imagined that every seller is obtaining the full circular.

Announcements of advances in prices have followed one after another very rapidly this past fortnight and the latest were only given out yesterday. The various companies quote as follows: Lehigh Valley, stove, $3.75; egg, $3.65; chestnut, $3.60; broken, $3.35. The Lehigh & Wilkes-Barre's prices are the same with the exception of chestnut, which it quotes at $3.40. The Philadelphia & Reading quotes on hard white ash, $3.45 for broken, $3.75 for egg and stove, and $3.40 for chestnut. The other companies quote $3.75 for stove; $3.60 for egg and chestnut, and $3.50 for broken. All these prices are f. o. b., less the usual commission, which is from 15@20c. These latest figures have not yet obtained freely, as they were only given out on Thusday.

Briefly described, the condition of the tidewater market is this: Owing to the greatly improved Western business there is a scarcity of cars, which forces the collieries to restrict. Owing to the drought in the Lehigh and parts of the Wyoming and Schuylkill regions there is a scarcity of water, and the miners cannot work on full time, even if they would. Thus a wise thing is accomplished in spite of producers. In addition to this the desire to finish up the Western business before the close of navigation produces a relative scarcity of coal for this market.

Now, we have made a very thorough canvas of the trade and find, according to the statements of the officials of the companies, that the latter are sold up for 50 days ahead; that is to say, if the companies confined themselves to delivering unfilled orders they would be busy for nearly two months to come. Morever, the really significant fact is that these orders were taken at the old or low prices and not at the advance.

In this market consumers have been forced by the cool spell to purchase more freely and dealers have had to follow this example. Still, the anomalous spectacle is seen to-day of dealers who bought coal from the companies at the low prices and have not yet received it, going into the market for cargoes for which they pay about 50c. a ton more than they should pay for the coal the companies sold and have not delivered. Yesterday a man who bought 30,000 tons of coal from a certain company at low prices, but has received only a small portion of it, had to buy a few cargoes for immediate delivery, for which he paid on the basis of $3.75 alongside for stove. This, incidentally, is the highest figure which we know to have been paid for coal this week. The lowest is 25c. less. The companies find more profit in selling at present prices for prompt shipment, and as dealers will not put in orders for long delivery the companies allege that the scarcity of cars, water, etc., does not permit them to deliver much coal on the orders booked by them at the less satisfactory figures of a month ago. When dealers want coal now they want it at once, and as egg and stove are really scarce, the price they must pay depends largely upon how urgently they need supplies.

Bituminous.

There is a little more activity in the soft coal market, due to some extent to fresh orders of a transient character, and also rather more spot business than usual. For this business there is less competition than usual, many of the producers having as much as they can do to clear up the balances of old "delivered" contracts before the impending advance in ocean freights takes place. Notwithstanding this lack of bitter competition for the new business, the usual reports of extraordinarily low figures have gone the rounds of the trade, one statement fixing the price of a certain order at $1.50 f. o. b., Philadelphia. This report is manifestly utterly improbale, and it is not believed that coal sold for less than $1.80, if indeed as low.

There are considerable stocks in the far East for winter supply in the hands of consumers, but in nearly every instance where the daily consumption is fairly large, a fresh cargo is put in for every one used to keep stocks up. This, of course is to take advantage of the prevailing ocean freights, which will advance later in the season.

The distribution of coal extends pretty generally over all consuming territories. In proportion to their customary wants the Sound ports are taking a little more than usual, owing to the preference of the captains to charter for these ports in order to avoid the stormy passage around the cape. The trade about New York harbor is brisk and a little new business is doing, consumers apparently making some effort to keep full stocks on hand. Orders for shoal-water points are practically all filled and owners of light-draught vessels are beginning to talk of tying up for the winter although it is very early in the season. In the all-rail trade a considerable tonnage is going forward.

Transportation is not as good as it was a fortnight ago and on some of the roads a blockade is feared. However, if such a point should be reached it would not be very injurious, as there is a short supply of vessels at the shipping ports. The car supply is in pretty much the same condition on some of the railroads and the coal companies which have their own cars have the advantage over less favored competitors.

Owing to adverse winds a great number of vessels have been driven into the Eastern discharging ports at one time, and this quantity of arrivals taxed discharging facilities to such an extent that considerable demurrage has been paid. These vessels have not yet begun to get back to the loading ports, and consequently a shortage in the available supply there is reported. Rates are firm, and we quote nominally as follows from Philadelphia: To Boston, Salem and Portland, 75c.; Providence, New Bedford, New Haven, Bridgeport and other Sound ports, 60c.; Portsmouth, 65@70c.; Wareham, 85@90c.; Lynn, 85c.@$1; Newburyport, 80c.; Dover, $1 20@$1.25; Saco, 95c.@$1; Bath, 75c.; Gardiner, 80c.; Bangor, 75@80c. Towage where usual. Baltimore, Norfolk and Newport News are 5@10c. above these rates.

Buffalo.

Oct. 10.

(From Our Special Correspondent.)

The anthracite coal trade continues to rule fairly active at the advanced quotations. News items are scarce.

The bituminous coal trade also shows a fair demand and quotations are more rigidly kept than heretofore. Supply large and more than adequate for the requirements of the business.

Lake freights have advanced 15c. per net ton to Chicago and Milwaukee with upward tendency. Lake Superior rates, however, are unchanged.

For the year ending June 30th, 1895, the New York Central & Hudson River Railroad moved 5,602,230 tons of coal and coke, as compared with 4,889,742 tons in corresponding period ending June, 1894.

The shipments of coal westward by lake from Buffalo from September 29th to October 5th, both days inclusive, aggregated only 71,125 net tons, distributed as follows: The rates of freight were 75@85@90c. to Chicago, 65@75@80c. to Milwaukee, 65c. to Green Bay, 45c. to Saginaw, 50c. to Marquette, 40c. to Fort William, and 30c. to Duluth, Superior, Gladstone and Bay City, and 25c. to Detroit and Toledo. It will be observed that Chicago and Milwaukee rates advanced—closing strong.

The following statistics of the coal trade of Buffalo were furnished by Mr. William Thurstone, Secretary of the Merchants' Exchange: Railroad receipts and shipments not reported by request. No receipts by lake thus far this season, and none in 1894 and 1893. Shipments of coal westward by lake for the month of September 362,155 net tons, as compared with 264,910 net tons in 1894 and 394,168 net tons in 1893; for the season to October 1st 1,494,181 net tons, as compared with 1,563,977 net tons in 1894 and 1,834,242 net tons in 1893. The receipts of coal by canal for the month of September 4,684 net tons, as compared with 10,117 net tons in 1894, and 15,953 net tons in 1893; the receipts for the season to October 1st, 10,166 net tons, as compared with 26,203 net tons in 1894 and 55,382 net tons in 1893. The shipments by canal for the month of September, no net tons, as compared with 856 net tons in 1894 and 1,860 net tons in 1893. The shipments for the season to October 1st, 4,289 net tons as compared with 6,209 net tons in 1894 and 13,884 net tons in 1893. The aggregate shipments of coal by lake this season to October 1st show a decrease of 69,796 net tons as compared with 1894, and a decrease of 340,061 net tons as compared with 1893. The rates of freight during the month of September this year from Buffalo to places westward were: 65@75c. to Chicago; 60@65c. to Green Bay and Milwaukee; 30c. to Duluth and Lake Superior ports; 25@30c. to Bay City; 35@45c. to Saginaw; 75c to Racine, and 25@30c. to Toledo. A year since the rates were 50@55c. to Chicago; 50c. to Milwaukee and Green Bay; 30c to Duluth and Lake Superior ports; 25c. to Toledo and Detroit; 55@60c. to Racine; and 35c. to Bay City and Saginaw.

Coal shipments from Buffalo by lake this season to October 1st, were distributed about as follows: To Chicago, 450,236 tons; to Milwaukee, 374,909 tons; to Duluth, 101,225 tons; 140,480 tons to Superior; 49,220 tons to Toledo; 2,555 tons to Detroit; 85,000 tons per vessels from Tonawanda, destination not stated; 22,000 tons to Gladstone; 17,080 tons to Manitowoc; 4,825 tons to Sault Ste. Marie; 9,558 tons to Bay City; 3,975 tons to Kenosha; 19,473 tons to Saginaw;

19,536 tons to Racine; 26,230 tons to Green Bay; 3,600 tons to Sheboygan; 4,550 tons to Marquette; 3,750 tons to Washburn; 3,150 tons to Kenosha; 1,770 tons to Menominee; 632 tons to Windsor; 2,625 tons to St. Clair; 175 tons to Alpena; 650 tons to Ludington; 1,665 tons to Cheboygan; 1,350 tons to Marine City; 5,978 tons to Ashland; 675 tons to Marinette; 485 tons to Port Huron; 9,745 tons to Lake Linden; 350 tons to Bay City; 632 tons to Owen Sound; 1,650 tons to Michigan City; 300 tons to Ontonagon; 10,455 tons to Fort William; 800 tons to Traverse City; 325 tons to Oscoda; 1,700 tons to Houghton; 15,250 tons to Hancock; 600 tons to Benton Harbor; 320 tons to Sand Beach; 1,264 tons to Grand Haven; 175 tons to Black River; 1,000 tons to Portage; 25 tons to Point Burwell; 500 tons to Algonac; 400 tons to Put-in-Bay and 60 tons to Serpent River.

Chicago. Oct. 9.

(From Our Special Correspondent.)

The Chicago market has become very active all of a sudden, and consequently there is already the usual early winter rumor of scarcity of anthracite coal in this market. It is a fact that there is some shortage here, but it has not reached the extent of a famine. Everybody appears to be laying in a winter's supply of coal at once and the retailers are rushed in filling up the coal bins of their consumers. The shortage of cars to transport coal to this market is observed, but the railroads are now making great efforts to meet the demand. Shipments by lake so far this season have fallen short of last year's record fully 25%. Bituminous coal is in great demand, but the supply is fully equal to it. Freight rates have taken somewhat of a jump, to the western points; the Northwestern road during the months of August and September carried to Missouri River points hard coal to the extent of 36,000 tons, while all other roads to the same territory took out but a little over 5,000 tons. Coke prices have advanced.

Pittsburg. Oct. 10.

(From our Special Correspondent.)

Coal.—In the absence of a boating stage of water in the Ohio, we have but little to report. All hands have been waiting for that important event over five months, and how much longer before we have a rise will be learned later. There is sufficient coal loaded to make three big runs, as a large amount of this coal is in boats. The principal bulk will go to the southern ports, which are anxiously waiting for it. The joint convention of the local miners and operators is to be held on Thursday. All arrangements for the convention have been completed. It will undoubtedly be one of the largest and most representative gatherings of both sides ever held in the Pittsburg district. National President Phil H. Penna and other big lights will be in attendance.

Connellsville Coke.—The Austrian minister has been this week at Leisenring and Trotten investigating the condition of foreign workmen as a result of reports that many were killed during the strike. The minister, Baron Hengemuller, expressed himself as being satisfied, after a careful investigation, with the condition of the foreigners in the region and said he will so report to his government.

The coke question has been settled for the present. The summary of the region for the week shows 15,400 ovens in blast and 2,535 idle. The active list was increased 50 ovens since our last. Again the McClure Coke Company completed a block of 50 ovens to its Lamont No. 2 plant and fired the ovens up; the other changes show 225 ovens fired at various points. The region has now the largest number of ovens in blast that have ever been known in the region. The product of the region for the week amounted to 155,165 tons, being an increase of 6,908 tons for the week. The H. C. Frick Coke Company made a full six days' run at all its 24 plants in blast. The McClure Coke Company made a full six days at all its plants. The shipments amounted to 168,360 tons, being an increase over the preceding week of 4,582 tons.

The shipments from the region for the week amounted to 9,213 cars, as follows: To Pittsburg, 2,530 cars; to points East, 1,752 cars; to points West of Pittsburg, 4,722 cars; total, 9,013 cars. Prices unchanged; freights to Pittsburg, 65c. per ton.

Shanghai, China. Aug. 30.

(Special report of Wheelock & Co.)

Coal.—Japan coal has come to be nothing but a drug on the market and is only saleable in small quantities for actual consumption, and even then at considerable below cost. During the past fortnight a sort of panic broke out among the dealers and all were eager to sell at any rate offered but no buyers came forward, and the result is that deliveries have been very poor and are not likely to increase for some time. Welsh coal is without demand, and there has been no business. Australian coal has perhaps showed more activity, but there is nothing of importance. We quote for American anthracite, 12 taels per ton; for Welsh, 10·50 taels per ton for Cardiff; for Australian, 9·50 taels per ton for Wollongong, and 7·50 taels for Newcastle. For Japan prices are altogether nominal, but we quote 5·75 taels per ton for Takisima lump; 4·75 taels for Namazuta lump, and 3·50@3·76 taels per ton for other sorts.

Kerosene Oil.—Business has been restricted exclusively to retail sales, and at low rates dealings have been fairly large. Transactions have the appearance of being forced, sellers finding great difficulty in taking up contracts entered into at high prices. On the whole the market is in a very unsettled state. There have been no arrivals, and stocks at wharves are now 1,140,677 cases American, and 287,367 cases Russian. We quote for American, 1·60 taels per case for Devoe's, and 1·50 taels for Chester. For Russian prices are 1·50 taels per case for Batoum, and 1·45 taels for Batoum bulk.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Oct. 11, 1895.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Oct. 12, 1894		Week ending Oct. 11, 1895.		From Jan. '94.	From Jan., '95.
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
Anthracite.	31	17,401	56	24,250	657,741	879,268
Coke...	119	137,002	150	172,450	3,708,303	5,823,344
Charcoal...	22	4,745	22	4,830	166,495	168,145
Totals	172	159 148	228	211 530	4,532,539	6,870,757

The increase in pig iron production shown by the reports of the furnaces is about 8,000 tons weekly, and is as large as was expected. In fact it may be said that the list of active furnaces now includes nearly all of those which are in condition to make iron with reasonable economy. The lists always include a number of furnaces, which, from their size, location or antiquated plant, are really not in a condition to work, besides the proportion under repair. At the present time there are practically only a few furnaces which could be blown in on short notice, and several of those will start up shortly.

The general iron market is in a comparatively quiet state this week. While there is still a very active demand, there seems to be a general feeling that the advance in prices has been pushed too far, and there is a tendency among buyers to hold off for a reaction. A slight fall in prices in some quarters is not improbable, but it is safe to say that in most branches of the trade the advances will be held.

A marked feature of the week has been the renewal of the railroad demand. The railmakers, as noted last week, withdrew their determination to take no orders for 1895 delivery at present prices. Some heavy orders for rails have been reported this week, and the mills will be supplied with work well into next year.

There has been a cessation for the present of new contracts for foreign ores, probably for the reason that most of the furnaces which can use those ores to advantage have provided for their supplies. Arrivals of Cuban and Spanish ores continue large.

NOTES OF THE WEEK.

At a meeting held in Pittsburg, October 9th, preliminary steps were taken among the bar iron manufacturers to form a national organization similar to the Merchant Bar Association of the West. About 40 representatives of factories from all parts of the country were present, and the Western Association was well represented. Several Pittsburg manufacturers were not present, but sent their best wishes. The whole body first met, then the Pittsburgers held a meeting among themselves to discuss certain matters which they would not make public.

A. R. Whitney, of the Portage Iron Company, presided at the meeting during the early part of it, and W. E. Taylor, of Youngstown, was in the chair later, as Mr. Whitney was called away. J. S. Elverson, of Catasauqua, Pa., was secretary for the Eastern Association, and George M. Clark, of Cincinnati, for the Western Association. Many prominent men were present and took an active part in the meeting. The object of the association is to regulate prices, differentials and outputs. Fourteen articles, representing by laws, were adopted. These articles will be sent to all the manufacturers in the country, and if 90% of them sign the agreement, the association will be organized; otherwise the articles will not be binding.

At a meeting in Philadelphia, the Baltimore & Ohio, the Central of New Jersey, the Philadelphia & Reading, the Lehigh Valley, the Cumberland Valley, and the Pennsylvania Railroad entered into the following agreement: It is agreed that, commencing October 15th, there will be a general advance in pig iron in carloads from furnaces in Schuylkill and Lehigh Valleys of 20%. It was also agreed that in view of advance being made from the local furnaces on the lines of the parties hereto, that a similar advance should be made from the "gateways" on Southern pig iron, 20% above the rates at present in force, the advance from the gateways however, to take effect October 21st, instead of October 15th, in order to give the Southern roads ample time to prepare their traffics to conform with the above advance. It was also understood and agreed that any pig iron arriving at the Southern gateways (Norfolk, Shenandoah Junction and Hagerstown), on or after October 21st, that the above advance will apply on such pig iron.

THE LOCAL MARKET.

The local market is quiet, but with none of the dullness often found at this point. There is a steady demand for material of all kinds, while the discussion of new projects and inquiries for the future promise well for next year's trade. Building is active in the city, and much of it is of the character into which iron and steel enter. On the whole the market is in a very satisfactory state.

Pig Iron.—Under a steady demand for small lots the market is fairly active, and prices are generally maintained. It is said that some lots have been offered at shaded prices, and this is probably true: but they are generally of iron a little below grade or from some furnace not in favor with buyers. For well known brands there is no decrease.

We quote for Northern brands as follows: No. 1 X, $14@$14.50; No. 2 X, $13@$13.50; gray forge, $12.50@$13. For Southern iron, prices are: No. 1 foundry, $13.75@$14; No. 2 foundry, $13.25@$13.75; No. 1 soft, $13.75@$14; No. 2 soft, $13.25@$13.75; forge, $12.50@$13. All prices are for tidewater delivery.

Cast Iron Pipe.—No new contracts of any size are reported, but there are a number of small orders coming in.

Steel Bilets.—The excitement of a few weeks has quieted down. No large sales are reported and prices are a little lower. While early deliveries cannot be had there is less difficulty in placing orders. Quotations are $26@$26.50 at tide water.

Spiegeleisen and Ferro-Manganese.—The market is quieter, and prices are a shade lower, in the absence of active demand. We quote foreign spiegeleisen $25@$26 per ton; ferro-manganese $52@$53.

Merchant Steel.—There is less activity, but prices are firm. There are reports of shading on some large orders, but they cannot be traced to any reliable source. We quote: Bessemer machinery, 1·60@1·70c.; open-hearth machinery, 1·75@1·90c.; soft steel bars, 1·45@1·55c.; steel hoops, 1·60@1·75c.; steel axles 1·55@1·70c.; links and pins, 1·70@1·80c.; tire steel, 1·85@1·95c.; spring, 2·10@2·25c., all delivered.

Structural Iron and Steel.—Inquiry continues active and some good contracts are said to be in prospect. There is no change in prices, except that angles are a little lower. Quotations are: Angles, 1·70@1·85c.; beams (up to 15-in.), 1·80@1·90c.; channels, 1·90@2c.; tees, 1·90@2c.

Plates.—The demand continues steady and the mills are all full. Buyers talk of concessions on large orders, but manufacturers do not seem disposed to meet them. Prices are unchanged. Universal mill plates continue at 1·90@1·95c. For steel plates we quote: Tank, 1·95@2c.; boiler shell, 2·05@2·20c.; flange, 2·10@2·25c.; firebox, 2·50@2·70c., according to size and quality.

Steel Rails and Rail Fastenings.—Quotations for standard sections are $28 at mill, or $28.75 at tidewater. There are many inquiries for street rails, but not much actual business reported. For rail fastenings we quote: Fish and angle-plates, 1·45@1·50c.; spikes, 1·80@1·85c.; bolts, square nuts, 2@2·15c.; bolts, hexagon nuts, 2·10@2·20c.

Scrap.—The demand for foundry scrap continues fairly active. Supply is a little better, as the high prices recently are bringing out all that is available. Quotations are $10.50@$12 per ton, according to quality.

Buffalo. Oct. 9.

(Special report of Rogers, Brown & Co.)

Taken as a whole, the market during the past week has been very quiet in this district. Several foundries, finding their stocks low, either from increased consumption or a shortage at the furnace, have been in the market for iron for immediate shipment. Several round lots of Southern soft iron that have been in warrant yards for some time were sold in this vicinity to those who found they needed more iron in addition to contracts placed some time ago. Foundries in general report that they are getting better figures for their castings and that more work is offered them each week. Furnaces are already suffering from the lack of cars to ship the iron in, and some have been inconvenienced by shortage of cars in the coke region. With the market quiet, yet firm, we quote on the following basis, cash f. o. b. cars Buffalo: No. 1 Foundry Strong Coke Iron, Lake Superior ore, $15.25@$15.75; No. 2 Foundry Strong Coke Iron, Lake Superior ore, $14.75@$15.25; Ohio Strong Softener No. 1, $16.25@$16.75; Ohio Strong Softener No. 2, $15.25@$15.75; Jackson County Silvery No. 1, $16 25@$17; Lake Superior Charcoal, $16.25@$16.75; Southern Soft No. 1, $15.15@$15.65; Southern Soft No. 2, $14.65@$15.05; Hanging Rock Charcoal, $18.50.

Chicago. Oct. 9.

(From Our Special Correspondent).

There has been no improvement of note in the iron trade of Chicago the past week, business having been confined in most lines to sales of rather limited quantities. The Illinois Central Railroad Company will build a bridge across the Illinois River at La Salle, Ill., to cost $1,000,000. Rates on pig iron, billets, blooms, etc., will be advanced October 15th from Chicago and West to $2.95 per ton on pig iron, and on billets, blooms, etc., $2.60 which represents an advance of 10 cents. It was also recommended by the freight committee to make the eastbound pig iron rate to trunk line points $4.35 per ton and on billets, blooms, etc., $4.90 a ton Chicago to New York. The latter is an advance of 15 cents. The first advance in rates goes into effect October 15th and the second advance November 1st.

Pig Iron.—The situation in the pig iron market has shown no change, buying being for small quantities, mostly car lots. Prices continue firm, despite the poor trade. Inquiry for both Northern and Southern iron has increased. Prices are as follows: Per gross ton f. o. b. Chicago: Lake Su-

perior charcoal, $16; Lake Superior coke No. 1, $14@$15; No. 2, $14@$14.50; No. 3, $13.50@14; Local Scotch No. 1, $13.50; No 2, $13; No. 3, 12 50; Jackson County silveries, $15 50@$16; Southern coke, foundry, No. 1, $13@$13 50; No. 2, $12 75@$13; No. 3, $12.50; Southern soft, No. 1, $13@13.50; No. 2, $13; Southern car-wheel iron, $17.50; Southern silveries No. 1, $14; No. 2, $13.50; Tennessee charcoal No. 1, $13@$13.50; Bessemer, $13.50@$14; Ohio strong softeners, $13.50@$14.

Structural Material.—Building shapes have been sold in small quantities, while there is quite a good inquiry for bridge material. A couple of large bridges are soon to be in the market. Some of the larger buildings going up here at the present time are delayed on account of structural material not being delivered fast enough. Prices are for universal plates, 1·90@2c.; beams and channels, 1·90@2c; angles, 1 85@1·90c; tees, 1·90@2c.

Merchant Steel.—Some good contracts were closed, and business was fair. Shipments are more active. Quotations are: Tool steel, 5@7·50c.; Bessemer bars, 1·60@1·70c.; smooth finished machinery, 1·80@1·90c.; tire steel, 2@2·10c.

Bar Iron.—A contract for 500 tons was placed during the week and a number of smaller sales were made. Inquiry suggests improved trade. Bar iron is selling common, 1·50@1 60c. and refined, 1·60 @1 70c.

Billets and Rods.—Sales of billets aggregated 15,000 tons during the week, and inquiry is very large; 6,000 tons of rods were also disposed of. Billets are selling $25.50@$26.50, and rods $34@$35.

Steel Rails.—Orders were booked for a good many tons of rails, but as the Illinois Steel Company is full, the total for the week is not as large as could have been taken had the company been particularly anxious to have them. Price of rails is $27@$29.50, according to size.

Old Rails and Wheels.—A few sales of old iron rails are noted at about $19. Old wheels are quiet at $12.50.

Cleveland, O. Oct. 10.

(From Our Special Correspondent.)

The situation in iron ore has materially changed since last week. The movement from the head of the lakes has been seriously checked. Almost all the ore now leaving Duluth, Two Harbors and Ashland is in vessels on season contract. The wild tonnage that is in the ore trade at all is confined almost entirely to Escanaba. Not only the product of the Marquette and Menominee ranges, but even of the Gogebic district, is now being shipped by rail to Escanaba and thence by vessel. Water rates from the head of Lake Superior have advanced so rapidly as to make almost prohibitive the shipment of ores from Ashland, Duluth and Two Harbors, and the curious anomaly is presented of a lower rail and lake rate from the Ashland district by Escanaba than by Ashland. Chicago has also become an active bidder for boats and vesselmen have received offers of 4c. for corn, Chicago to Buffalo, equivalent to $1.60 per ton. Against these grain competitors the ore men have a hard time of it.

Very little is doing in sales of ores. Only a few small orders are being placed. There is no Bessemer product in the market, and the non-Bessemers are almost equally scarce. There are fewer inquiries, probably because buyers know that there is no ore to be had, not because their wants are fully supplied.

Quotations remain unchanged for the week. A few small choice lots of Bessemer were sold during the week at the maximum figure below: Standard Bessemer specular, $4.75@$5.25; Standard Bessemer hematites, $4.25@$4.50; standard non-Bessemer specular, $3.75@$4; standard non-Bessemer hematites, $3.25@$3.50.

Pittsburg. Oct. 9.

(From our Special Correspondent.)

Raw Iron and Steel.—Trade since our last has not been very active, the market being a waiting one. A slight weakening in the price of. In Bessemer pig and steel billets a policy of greater caution has prevailed among general buyers of iron and steel products, but a favorable development has been the placing of liberal orders by the leading railroad companies for steel rails, which shows confidence in the stability of the recently advanced prices. Within a few days heavy contracts have been given out, partly for delivery this year and partly for next year's uses, the orders being divided among the Illinois Steel Company, the Carnegie Steel Company, the Cambria Iron Company, and the Pennsylvania Steel Company. The Baltimore & Ohio Railroad Company has bought 20,000 tons, one of the Southwestern railroads has ordered 25,000 tons, and the contracts for smaller quantities aggregate 50,000 tons. The Association of Steel Rail Manufacturers has renewed its agreement for another year, and has fixed the price for 1896 at $28 at Pennsylvania mills, the figures now in force. It is said that an effort will be made in the near future to advance prices to $30.

Notwithstanding the fact that prices of certain grades of iron and steel products were a shade weaker, prices at most Western centers are firm, and dealers said to be sold eight months ahead. The undertone of the market is certainly gaining strength; furnacemen are in a position to maintain prices. At the rate of present consumption the stock in consumers' hands will soon be exhausted and more supplies will be required to keep the plants running. The Philadelphia market seems to be in a bad way; almost anything except rails can be purchased $1 a ton or more cheaper than last week, and this fall in prices has not stimulated consumption to any extent. Buyers are moving very cautiously, not because their needs are supplied, but because the capacity available is so large that there is a great question whether any considerable advance in prices can be made.

Lake.—Bessemer is weak and holders indifferent about selling. Steel billet sales are reported at last week's figures. Steel wire sold, the demand has fallen off. Gray forge is weaker, demand light. Scrap material is dull and lower. Old iron and steel rails are on the down grade. It looks as if both sides were disposed to take a rest.

Tons.	COKE-SMELTED, LAKE AND NATIVE ORE.	Cash.
4,000	Bessemer, Oct., Nov., Dec., Valley	$15.00
2,500	Bessemer, Oct. Nov., Valley	15.00
2,000	Bessemer, Oct. to Jan., Pittsburg	16.00
1,500	Bessemer, balance of the year, Pittsburg	15.90
1,500	Gray Forge, Nov., Pittsburg	13.25
1,000	Bessemer, Nov., Dec., Valley	15.10
1,000	Bessemer, Oct., Pittsburg	15.75
1,000	Gray Forge, Prompt, Pittsburg	13.25
500	Bessemer, Spot, Pittsburg	16.00
500	Mill, Oct., Pittsburg	13.25
500	Bessemer, Oct., Nov., Pittsburg	16.00
500	Gray Forge, Nov., Pittsburg	13 25
200	No. 1 Foundry, Pittsburg	15.00
200	No. 2 Foundry, Pittsburg	14.25
100	No. 3 Foundry, Pittsburg	13 50
100	No. 2 Silvery, Pittsburg	13.50
50	Gray Forge, Pittsburg	13.50
50	No. 2 Foundry, Pittsburg	14.30
	CHARCOAL.	
100	Cold Blast	$23.50
50	No. 2 Foundry	17.25
50	Warm Blast Extra	23.50
50	Cold Blast Extra	28.40
50	Foundry Extra	28.60
25	Cold Blast	24.00
	BLOOMS, BILLETS AND SLABS, AT MILL.	
2,500	Billets, Oct., Nov., at mill	$24.00
1,000	Slabs, balance of the year, at mill	23.90
1,000	Billets, Nov., Dec., at mill	23.85
1,000	Billets, Oct., at mill	23.75
1,000	Billets, Oct., Nov., at mill	23.75
500	Billets, prompt, at mill	23.50
	SKELP IRON.	
750	Wide gr'vd	$1.50 4 m.
600	Nr'w gr'v'd	1.50 4 m.
500	Sheared	1.80 4 m.
	SKELP STEEL.	
725	Sheared	$1.70 4 m.
700	Nr'w gr'vd	1.40 4 m.
340	Wide gr'vd	1.40 4 m.
	MUCK BAR.	
1,000	Neutral, Nov	$23.50
500	Neutral, Oct., Nov	23.75
	BLOOMS, BILLETS AND BAR ENDS.	
1,000	Blooms and Billet Ends	$17.00
	FERRO-MANGANESE.	
500	80%, d'liv'd	$55.00
50	80%, Nov., Dec	57.00
	STEEL WIRE RODS.	
800	5-gage at mill	$31.50
	SHEET BARS.	
300	At mill	$27.00
	OLD IRON AND STEEL RAILS.	
500	Iron Rails	$18.50
300	Iron Rails	18.75
200	Steel Rails, mixed	16.00
100	Steel Rails	15.75
	SCRAP MATERIAL.	
500	No. 1 R. R. Wro't net	$15.00
500	Sheet Scrap, gross	10.00
250	Heavy Steel, gross	10.00
250	Cast Scrap, gross	12 00
200	Cut Pipe, net	12.00

Philadelphia. Oct. 10.

(From Our Special Correspondent.)

Pig Iron.—The eastern Pennsylvania iron trade has quieted down still farther under declining activity in bars. The anxiety of some makers of iron to secure orders does not help the market. Shaded quotations were given to-day by four or five brokers representing brands a trifle under standard. Brokers refuse to lower quotations for publication. Standard and special brands are not affected yet, and until very recently there was an urgency on the part of buyers to secure all they could. No. 1 foundry is $14@$14.25; No. 2, $13@$13.25; forge, $12@$13.25; Bessemer, strong.

Steel Billets.—Some buyers are anxious to obtain early deliveries and two or three transactions were closed to-day, but neither side would say what prices are. The rumors to-day from Western Pennsylvania corroborate the allegations of a declining tendency, but one or two agents, speaking for Western interests, declare there will be a hardening tendency before long. As no positive statement can be had from those who ought to be posted, none will be risked here. Billets are $24.50@$25.

Merchant Iron.—A weakening tendency is apparent because of the general expectation of lower prices in all kinds of iron and steel. There is already a struggle for business, and prices on large orders, late delivery, are fully a tenth off. Mill owners are disappointed at the indications of a sag before they can load up with high priced business.

Skelp.—Quick at 1·45. Buyers are around but are waiting.

Sheets.—The reduced volume of business is apparent in quotations.

Merchant Steel.—This branch keeps up better.

Wrought Iron Pipe.—All mills are having work coming in for fall delivery. A few parties are taking advantage of concessions to figure on winter deliveries. Orders from these people will be entered early next week probably. Discounts on boiler tubes, 2½ in. and larger 65%.

Plate and Tank.—Competition developed rather unexpectedly this week, resulting in a drop of at least one-tenth even on moderate orders. A small Cramp order was placed in a Harrisburg mill. Boiler iron demand is fair, a good many shops having begun to buy early winter stuff. Mill men say there can be no prolonged dullness in plate. Steel tank is quoted at 1·90; heavy plates, 2·00; shell, 2·10, and flange, 2·25. All of which figures can be shaded.

Structural Material.—Railroad people have during the past month made known their probable wants regarding bridge-building material. When they decide to buy the mills will be crowded, but to-day's view of the matter is that there will be no immediate action taken in the placing of large orders. Reason—too high prices. Angles, 1·75. Beams and channels, 1·80.

Steel Rails.—There has been no more placing of large orders, the drop in billets having induced some managers of roads to wait and see where this drop will stop. Standards, $28. Light, $29@$30.

Old Iron Rails.—Quiet at $16.

Cartagena, Spain. Sept. 20.

(Special Report of Barrington & Holt.)

We are able at last to report a decided change for the better in the local market for iron and manganiferous ores. During the last fortnight a large proportion of the stocks which have been accumulating for two years have been disposed of, and both English and American buyers are sending in orders for contracts running over 1896. A large quantity of 20% manganiferous ore was sold last week for forward delivery to America. Prices for both ordinary Portman and manganiferous ores are from 3d. to 1s. per ton higher than a month ago, and some sellers are declining to contract ahead, hoping to obtain still better prices. Altogether business is more active than it has been for several years. We quote for iron ores: Ordinary 50% Portman, 5s. 4d.@5s. 6d. per ton; special low phosphorus, 5s. 6d.@5s. 8d.; extra quality low phosphorus, 6s. 4d.; special iron ore, 6s. 9d.; specular iron ore, 60%, 8s. 10d. For manganiferous ores we quote: No. 1, 20% iron and 20% manganese, 13s.; No. 1 B., 25% iron and 17% manganese, 10s. 2d.; No. 2, 30% iron and 15% manganese, 10s.; No. 3, 35% iron and 13% manganese, 9s. 2d. Manganese ores, 35 to 40%, are quoted 1s. per unit.

We quote also for iron pyrites, 40% iron and 45% sulphur, 10s. 6d. per ton; for yellow ocher, best quality, 42s. 6d. per ton. All quotations are f. o. b. shipping port—Portman or Cartagena.

METAL MARKET.

NEW YORK, Friday Evening, Oct. 11, 1895.

Gold and Silver.

Prices of Silver per Ounce Troy.

October.	St. Ex.	London Pence.	N. Y. Cts.	Value of £1. to $1.	Oct.	St. Ex.	London Pence.	N. Y. Cts.	Value of £1. to $1.
5	4.87⅛	30¾	67¼	.520	9	4.87	31	67¾	.524
7	4.87⅛	30¾	67⅝	.521	10	4.87⅛	31⅛	68	.526
8	4.87	30⅞	67½	.522	11	4.87¼	30 15/16	68⅝	.531

The rising Eastern Exchanges, as indicated by the advance in India Council rates, have carried up the price of bar silver to the highest point reached in some time. This fact, coupled with the small holdings in New York, has advanced the price here temporarily above London. Some speculative ventures on the Stock Exchange have also occasioned a little extra demand for the metal.

The United States Assay Office at New York reports the total receipts of silver at 141,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States ports, August, 1835, and years 1895 and 1894 in coin and bullion:

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
Aug	$16 667,261	$1,507 473	$4,553,698	$1,117,823	E. $18,595,657
1895..	55,766,217	28,063,876	34,265,216	6,402,620	E. 54,761,954
1834..	90,299,031	16,055.759	31,340,426	6,453 7 8	E. 99.119,919

Imports and exports of gold and silver in ores for the eight months to August 31st are reported as below:

	Gold.		Silver.	
	1894.	1895.	1894.	1895.
Imports	$514,340	$1,134,068	$5,031,207	$8,087,140
Exports	22,007	320,769	191,871	61,921
Excess, Imports.	$192,333	$811,299	$1,839,336	$8,016,219

These imports and exports in ores are not included in the table of exports and imports of coin and bullion given above.

Adding the exports and imports in ores to those in coin and bullion, we have the following statement for the eight months of the present year to August 31st:

	Exports.	Imports.	Excess.
Gold	$56,086,986	$29,193,044	E. $26,891,942
Silver	33,327,137	14,280,760	E. 19,046,377
Total	$89,414,123	$43,476,704	E. $45,937,419

The statement includes all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending October 11th, 1895, and for years from January 1st, 1895, 1894, 1893 and 1892:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$10 800	$143,668	$538,636	$10 406	E. $395.362
1895..	58,005,022	26,073.577	30,769,059	1,406,631	E. 61,293,873
1894..	82,434,600	14,429.089	26,304,369	1,265,322	E. 93,544,558
1893..	69.807,483	57.719,163	24.269,467	2,030,135	E. 34,227,652
1892..	58,727,639	6,560,722	16.631,294	1,969,462	E. 66,831,749

The gold exported for the week went to South America; the silver nearly all to London. The gold imported was from the West Indies; the silver from Mexico.

FINANCIAL NOTES OF THE WEEK.

In some quarters we hear this week of a slight reaction in the advance of prices, and of a little hesitation in business. This was to be expected, and is simply one of the breaks in an advancing movement, which are sure to occur from time to time. The general condition of trade is not affected; there is simply a halt called for those who are inclined to move too fast.

No gold exports are noted this week, and the demand for foreign exchange, is, for the present, fully met by the cotton bills which are now in good supply, and by the grain bills which are beginning to come on the market.

A sharp rise in the price of silver is reported this week, with a renewal of speculative dealings. The price, which has been for some time well sustained and very nearly uniform at about 30½d. per sterling ounce in London and 67c. per full ounce in New York, has risen this week to 31⅝d. and 69¼c., respectively. The chief cause of this movement seems to have been an increase in London buying, based on rumors of a large demand for China and Japan, and reports of light stocks. So far, this movement is purely speculative in its nature.

The uneasiness in the South African mining market in London and the possibility of a break in those stocks may have the effect of turning attention to American securities. So far, however, the South Africans continue to absorb attention in London and Paris.

The statement of the United States Treasury on Thursday, October 10th, shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	Oct. 3.	Oct. 10.	Changes.
Gold	$92 717.557	$93,041,542	I. $323.985
Silver	17,296.301	15,990,229	D. 1,306 072
Legal tenders	45,758,611	50,539,453	I. 4 780,842
Treasury notes,etc.	34.910,021	29,693,502	D. 5,216,519
Total	$190,682,490	$189,264,726	D. $1,417,764

Government deposits with national banks on the same date amounted to $14,418,139, an increase of $262,073 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $143,426,280. Against these are held in the Treasury 19,424,608 coined standard silver dollars, and silver bullion purchased at a cost of $124,001,762, making a total of $143,426,370.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending October 5th gives the following totals, comparisons being made with the corresponding weeks in 1894 and 1893:

	1893	1894.	1895.
Loans and discounts	$393,347,800	$500,277,200	$510,202,200
Deposits	400 195,900	589,541,400	540,099,5 0
Circulation	14,940,900	11,142,000	14,253,600
Specie	84,372,700	92,215,100	60,937,900
Legal tenders	44.3(5.000	114,621,200	90,558,5(0
Total reserve	$128,677,700	$206,836,300	$151,496,400
Legal requirement	100,195,900	147,385,350	135,024,875
Surplus reserve	$28,481,800	$59,450,950	$16,471,525

Changes for the week were decreases of $5,824.650 in surplus reserve, $1,174,000 in loans, $739,600 in specie, $7,344,300 in legal tenders, and $9,037,900 in deposits; an increase of $151,600 in circulation.

Shipments of silver from London to the East for the year to September 26th are reported by Messrs. Pixley & Abell's circular as below:

	1894.	1895.	Changes.
India	£3,989,715	£2,818,680	D. £1,162,035
China	2,119,573	1,451,724	D. 667,849
The Straits	949,946	614,803	D. 335,143
Total	£7,050,234	£4,885,207	D. £2,165,027

Exports for the week were: Bar silver, £62,000 to Bombay, £10 000 to Hongkong, and £18,700 to Shanghai; Mexican dollars, £2,700 to Penag, and £1,100 to Shanghai; total, £94,500. Imports for the week were £113,000 bar silver, and £17,400 Mexican dollars, a total of £130,400, all from New York.

Indian exchange has been somewhat stronger, and all the Council bills offered—50 lakhs—were taken at an advance, making the average price 13⅝d. per rupee. The demand was reported to be largely on Chinese account.

For convenience of comparison, we have grouped together in the table below the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

	Gold.	Silver.	Total.
Asso. Banks of New York	.....	.....	$60,937,900
1894	.....	.....	92,215,100
Bank of England	$208,633,205	.....	208,633,205
1894	184,218,585	.....	184,218,585
Bank of France	397.135,500	$247,770,100	644,905,600
1894	397,151,562	218,921,048	628,072,610
Imp. Bank of Germany	.....	.....	225,075,000
1894	.....	.....	225,020,000
Austro-Hungarian Bank	109,420,000	65,176,000	174 596,000
1894	69,775,000	74,288,000	142,063,000
Netherlands Bank	21,366.000	34.055,000	55,421,000
1894	20,345,000	33,928,000	54,272,000
Belgian National Bank	.....	.....	22,407,000
1894	.....	.....	24,381,000
Bank of Spain	40,022,000	57,824,000	97,846,000
1894	40,020,000	48,291,000	88,311,000
Bank of Italy	60,690,000	9,290,000	69,980,000
1894	.....	.....	.....
Imp. Bank of Russia	355,560,000	57,500,000	409,060,000
1894	.....	.....	.....

The return for the Associated Banks of New York is of date October 5th; all the others are of date October 10th, except the Bank of Italy, whose return is dated August 31st, and the Bank of Russia, August 16th-28th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports its gold only, not considering silver at all. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

The following is the official report showing the coinage executed at the Mints of the United States during the month of September, 1895:

Denominations.	Pieces.	Value.
Double eagles	260,666	$5,213,320.00
Eagles	217,016	2,170,160.00
Half-eagles	32,008	160,040.00
Quarter-eagles	21	52.50
Total gold	509,711	$7,543,572.50
Standard dollars	90	90.00
Half-dollars	542,090	271,045.00
Quarter-dollars	732,090	183,022.50
Dimes	190,090	19,009.00
Total silver	1,464,360	$473,166.50
Five cents	552,740	27,612.00
One cent	3,430,240	34,302.40
Total minor	3,982,480	$61,914.40
Total coinage	5,956,551	$8,078,653.40

The work of the Mints was active during the month, especially in gold coinage.

In a very timely article on the modern disposition to regard the public treasury as inexhaustible and to appeal for government aid on all occasions, the London "Economist" well says: The funds at the disposal of the public treasury are simply moneys contributed under various forms by the inhabitants of the country. That is, they are moneys which once belonged to and were the private property of certain men and women. These moneys they were, however, obliged by law to contribute to the public purse. Hence all that is paid into the Treasury in the shape of taxation is withdrawn and taken away from some individual, and had it not been taken from that individual would have been spent or saved by him for his private profit or pleasure. The Treasury, that is, does not create money. It can only take it from one place and transfer it to another. All that happens is a shuffling of the financial cards. No doubt it is quite possible that the Treasury may make a better use of the money it takes out of private people's pockets than the private people would have made themselves. There are, however, plenty of instances in which the Treasury would take away and misapply money which if left with its original owners would have been put to far better uses. In any case, it is essential to remember that if money is raised to be spent on helping our moral needs at home, or in developing our material resources abroad, it will not be created, but merely withdrawn from other purposes. Possibly the new uses discovered by the State will be better than the old or than those which private enterprise would have discovered, but the fact remains that you cannot have it both ways. The money can only be spent once, and, therefore, the more State action the less private enterprise. That is a fundamental principle which must never be lost sight of when the question of State aid is under discussion.

Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

	Bid.	Asked.
Mexican dollars	$0.54½	$0.55
Peruvian soles and Chilean pesos	.48	.50
Victoria sovereigns	4.87	4.90
Twenty francs	3.87	3.90
Twenty marks	4.75	4.80
Spanish 25 pesetas	4.78	4.83

Other Metals.

Copper.—The market for copper was fairly steady, with further sales of Lake copper at 12c. For other sorts the demand has been rather slack. There have been some inquiries for electrolytic copper, but no business is reported, and the quotations remain nominally the same as last week, about 11⅝c. Casting copper is obtainable somewhat cheaper, and the quotation must be reduced to 11¼@11⅜c. All manufacturers report that they are very well supplied with orders. There is a very good demand for furnace material, which remains scarce. The exports of copper continue rather light.

In London the market was rather unsettled, and g. m. bs. show a not inconsiderable decline, being affected somewhat by the heavy drop in South African mining shares, which caused some speculative holders of copper to sell, and we quote £46 7s. 6d.@£46 10s. for spot, and £46 15s.@£46 17s. 6d. for three months prompt. The finer sorts have kept fairly steady, and for refined and manufactured we quote: English tough, £50 10s.@£51; best selected, £51 5s.@£51 15s.; strong sheets, £56 10s.@£57; India sheets, £53@£53 10s.; yellow metal, 4⅝d.

Tin has shown a very firm tendency, and the market has rather improved in spite of the bad statistical position, which, however, it is anticipated, has about reached the limit, and a diminution of the heavy stocks now held is being looked forward to. Good business has been doing all along at 14¾c. for spot, and 14⅞@15c. for November-December.

In London the market opened at £66 15s., declined towards the middle of the week to £65 15s., and closed at £66 7s. 6d.@£66 10s. for spot, and £66 15s.@£66 17s. 6d. for three months prompt.

Chilean Copper Market.—Messrs. Jackson Brothers write as follows under date of August 31st: Under the influence of the rising quotations from Europe and advices from the United States smelters on this side have met the market freely, disposing of most of their product as far forward as December, and even for January, the present currency prices being remunerative and gladly accepted. We note sales for the fortnight of 18,774 quintals. We quote for bar copper, $59.45 (Chilean currency) per metric quintal, f. o. b.; for regulus, 50%, $25.38 per metric quintal, and for copper ores 10%, $3.33 per metric quintal.

Copper Exports.—The exports of copper from the port of New York during the week ending October 11th, as reported by the New York Metal Exchange, were as follows.

Copper:			
London—Mobile	Wire	13	tons.
St. Petersburg—Cnicago	Ingots	150	"
Glasgow—Circassia	"	5	"
Havre—La Bourgogne	"	27	"
Liverpool—Umbria	Pigs	18	"
Rotterdam—Spaarndam	Plates	135	"
" "	Ingots	40	"
Hamburg—Patria	Pigs	25	"
" "	Bars	25	"
" "	Ingots	5	"
Matte:			
Liverpool—Umbria		42	tons.
" —Aurania		43	"

The exports of copper from the port of Baltimore for the week ending October 3d are reported by our special correspondent as follows:

Copper:			
Hamburg—Palaria	585 Bars	112,390	lbs.
" "	70 Cakes	238,418	"
Bremen—Dresden	259 Bars	45,044	"
Rotterdam—Urbino	2.970 Bars	404,211	"
" "	5,613 Plates	112,000	"

This is a total of 407 long tons, exported from Baltimore for the week.

The exports of copper from the port of Baltimore for the week ending October 11th are reported by our special correspondent as follows:

Copper:		
Liverpool—Sedgemore	3,377 Ingots	56,000 lbs.
Hamburg—Italia	1,638 Cakes	336,303 "
Havre—Oranmore	9,964 Bars	898,586 "

For the week ending October 11th this makes a total of 423 long tons of copper and 85 tons of matte from New York and 576 tons copper from Baltimore; a total of 999 tons of copper and 85 tons of matte exported for the week.

Arrivals at New York for the week were 25 tons bars from Hamburg; 1 ton bars from Rotterdam; 150 tons ingots from Newcastle—a total of 176 tons imported for the week, making the net exports 400 tons.

Lead.—The transactions have been rather large and consumers were eager buyers. Local smelters are rather stiff, finding it to better advantage to export the lead smelted in bond. Early in the week business was done at 3·32½c; but at the close nothing is to be had below 3⅝@3·40c.

In Europe prices have again advanced quite considerably, and the market is reported very firm, Spanish lead being quoted £11 6s. 3d.@£11 7s. 6d., and English lead 2s. 6d. more.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is strong, with demand increasing. The latest sales are on the basis of 3·12½ for corroding and 3·10 for ordinary. At the close no metal can be bought for less than these figures, and the amount of lead for sale appears to be very light.

Spanish Lead Market.—Messrs. Barrington & Holt write us as follows under the date of September 20th, from Cartagena, Spain: Prices for both

argentiferous and soft lead have risen, and the average quotation here for pig lead on wharf has been 54 reals per quintal of lead, the silver to be paid for at the rate of 14·375 reals per ounce. Exports of pig lead for the past four weeks have been: To Newcastle, 2,499,941 kilos.; London, 573,236 kilos.; Marseilles, 1,764,592 kilos.; total, 5,137,769 kilos. Of this total 500,037 kilos. were desilverized metal. There were also exported 10 tons lead ore to Marseilles. We quote for lead ore as follows: Potter's ore, 8s. 6d. per cwt.; Linares ore, 6s. 6d. for sulphide, and 4s. 4d. for carboonate.

Spelter continues irregular with only limited business doing, and we have to quote 4·20@4·25 in New York. In the West, business was reported as low as 3·95 St. Louis, but ores being scarce and held for high figures, refiners are reluctant sellers at these figures.

The London quotation for ordinary brands is £15 6s. 3d., and for specials £15 8s. 9d.

Antimony remains neglected, Cookson's 7¾, Hallett's 7¼@7¼; U. S. Star, 7½c.

Aluminum.—The standing quotations, according to producer's price list, are given below, the three prices named being respectively for small lots, for orders of 100 lbs. or over, and for orders of one ton or over: No. 1 metal, over 98% pure, in ingots ready for rolling, etc., 60c., 58c. and 55c. per lb. No. 1 metal, in ingots for remelting, 55c., 52c. and 50c. per lb. No. 2 metal, over 94%, but less than 98%, in ingots for remelting, 53c., 50c. and 48c. per lb. Rolled sheets, No. 1 metal, 80c.@$4.40 per lb., according to size and thickness. Wire, $1@$2.50 per lb., according to gauge. Tubes, from 14c.@$3.15 per linear foot, according to thickness and diameter. Castings, from 90c. per lb. up, according to pattern and size of order.

Abroad the price is fixed by the Neuhausen Company, which quotes 5 fr. per kilo.—equivalent to 45c. per lb.—at works in Switzerland for small orders; a discount is made on large sales. Quotations in Paris, for large orders, are 5 fr. per kilo. for ingots; 6 fr. per kilo. and upwards for sheets; 10 fr. per kilo for wire, 0·5 mm. and over; 15 fr. per kilo. and upwards for sheets. For small orders the quotations are 6·50@7 fr. per kilo.

Bismuth.—Prices are unsettled, and quotations vary from $1.35 to $1.95, according to grade and order. Probably a large order could be filled at $1.30, New York.

Iridium.—The demand is very small, and only occasional sales are made. The price varies from $25 to $35 per ounce, according to order and quality.

Magnesium.—The maker's prices are as follows, at works in Germany: 27 mark per kilo. - equivalent to $2.94 per lb.—for ingots; 26 marks per kilo. for bars; 36 marks per kilo. for powder, and 38 marks for ribbon and wire. For orders of less than 10 kilos., 1 mark per kilo. must be added for ingots of bars, and 2 marks for wire, etc.

Quicksilver.—Several changes have occurred in the market this week. On Monday an entirely unexpected reduction to $38.50 per flask, New York, was made, but two days later it was increased again to $39. Present quotations are $39 per flask, New York. London prices are £7 5s. per flask, with £7 3s. 6d. quoted from second hands.

Nickel.—Prices are unchanged, but demand is good. We quote 34@37c. per lb.

In London quotations are steady at 12@13d. per lb. Paris quotations are unchanged at 4 fr. per kilo. (equal to 35c. per lb.) for pure metal, and 2@2·25 fr. per kilo. for copper-nickel alloy, 50% nickel. These prices are shaded on large orders.

Phosphorus.—Quotations current are 50@52½c per lb., New York or Philadelphia.

Platinum.—Prices have an upward tendency still, and we quote $12 per ounce, New York, for large lots. The London price is higher, 46@47s. per ounce.

For chemical ware, best hammered metal, Messrs. Eimer & Amend, New York, furnish the following quotations, the prices given being respectively for orders of over 250 grams; for orders of over 100 grams and less than 250 grams, and for orders of less than 100 grams: Crucibles and dishes 46c., 47c. and 48c. per gram. Wire and foil are 43c., 44c. and 45c. per gram. The current retail price for crucibles is 60c. per gram.

Sodium.—In England makers' price is equal to 90@96c. per lb., according to quantity. Occasional sales only are reported here, usually on private terms.

Tungsten.—The following quotations for this metal and its compounds are furnished us by the manufacturers: Tungsten metal (powder) 98% pure, 70c. per lb.; tungstic acid. 45c. per lb.; tungsten salt tungstate of soda), 30c. per lb. These quotations are for large lots. For ferro-tungsten the quotations for ton lots of the various grades are as follows: 60% metal 60c. per lb.; 50% alloy, 45c. per lb.; 37% alloy, 33c. per lb. There has been no recent change.

Imports and Exports of Metals.—Imports of metals into this port for the week ending October 5th, as reported by the New York Metal Exchange, were as follows: 24,057 boxes, 300 tons tin and black plates, and 5 tons nickel from United Kingdom; 200 tons Straits tin, and 200 tons German lead, duty paid, from Germany; 450 tons Belgian lead, duty paid, from Holland; and 300 tons Belgian lead, duty paid, from Antwerp.

Exports of metals from the port of New York for the week were: 15 tons lead, in bond, to Canada; 51 tons tin scrap to Holland, and 10 tons sulphate of copper to Genoa.

Arrivals at Baltimore for the week ending October 5th were 40 tons tin, 7,317 boxes tin plates, and 283 tons ferro-manganese from the United Kingdom: 3,740 tons iron ore from Cuba.

Exports from Baltimore for the week ending October 4th were: 84 bbls., 45,286 lbs., sulphate of copper to Hamburg; 85 bbls., 45,250 lbs., sulphate of copper to Rotterdam.

Arrivals at Philadelphia for the week ending October 5th were: 500 tons Belgian lead from Antwerp; 2,690 tons manganese ore from Asiatic Russia; 1,453 tons iron pyrites from Pilley's Island; 2,800 tons iron ore from Algeria; 7,200 tons iron ore from Cuba.

Exports of metals from the port of Baltimore for the week ending October 10th are reported by our special correspondent as follows: 18 bbls. sulphate of copper, 9,600 lbs., to Liverpool; 25 boxes Japan iron, 1,500 lbs., to Hamburg: 203 bbls. sulphate of copper, 112,150 lbs., to Havre.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, October 11th.

Heavy Chemicals.—There has been but little change in the conditions outlined in our last review of this market. In caustic soda some contracts for delivery next year have been closed, but sellers are not pressing their goods at ruling figures. Alkali and carbonated soda ash have been in good request for prompt delivery as well as for shipment next year and some fair sales are reported. Bleaching powder is enjoying a fair jobbing trade, though contracts for 1896 delivery are not reported, as prices have not yet been announced.

We quote: Caustic soda, 2·15@2·25c. for spot; futures uncertain. Carbonated soda ash, 48%, is 95@1c., according to quantities and deliveries. Alkali is 90@1·05c., according to test. Bleaching powder, $1.85@$1.95, with little offering at those prices. Sal soda, 70@80c.

Acids.—There is a fair demand for acids and this in addition to light stocks in makers' hands keeps prices firm. We quote, per 100 lbs. in New York and vicinity, in lots of 50 carboys or over as follows: Acetic acids (in barrels), $1.40@$1.70, according to make and size of order. Muriatic acid, 18°, 75@90c.; 20°, 90c.@$1.15. Nitric acid, 36°, $3.50@$4; 40°, $4 @$4.50; 42°, $4.75@$4.25. Oxalic acid, $7.10@$7.60. Mixed acids, according to mixture. Sulphuric acid, 66°, 75@85c.; chamber acid, $6.50@$7.25 per ton at factory. Blue vitriol is in demand, with sales at $3.90@$4.10 according to size of order.

Brimstone.—We quote for best unmixed seconds, $15.50@$16 according to delivery. Thirds are 25@50c. less.

Fertilizing Chemicals.—There is very little doing in this market. A few contracts for 1896 delivery are reported, but on the whole the market is quiet and featureless. Quotations are as follows: Sulphate of ammonia, gas liquor, $2.50@$2.60; bone, $2.40@$2.50. Dried blood, high grade, $1.85@$1.90; low grade, $1.60@$1.70, per unit. Azotine, $1.85@$1.90. Concentrated phosphate (30% available phosphoric acid), 70@71½c. per unit. Acid phosphate, 13% to 15%, av. P_2O_5, 57c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P_2O_5, 90@92c. per unit. Acidulated fish scrap, $12, and dried scrap with few or no sales, nominally $21 f. o. b. fish factory. Tankage, high grade, $19@$20; low grade, $18@$19. Bone tankage, $21; ground bone, $19@$20. Bone meal, $21@$22.50.

In lots of 50 tons on contracts we quote, per 100 lbs.: Double manure salts, 48-53% (basis of 48%): New York, Boston and Montreal, $1.10; Philadelphia and Norfolk, $1.12½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.15. Sulphate of potash, 90%, and minimum, 96% respectively (basis of 90%): New York, Boston and Montreal, $2.08@$2.10; Philadelphia and Norfolk, $2.10½, Charleston, Savannah, Wilmington, N. C., and New Orleans, $2.13.

Muriate of Potash.—Quotations for lots of 50 tons are as follows: 80-85% and minimum 95%, respectively (basis of 80%): New York, Boston and Montreal, $1.78; Philadelphia and Norfolk, $1.80½; Charleston Savannah, Wilmington, N. C., and New Orleans, $1.83.

Kainit.—Prices for kainit (minimum 23%) are as follows for invoice and actual weights respectively: New York, Boston and Philadelphia, $8.80; Norfolk, $9.15; Charleston, Savannah, Wilmington, N. C., and New Orleans, $9.55.

Nitrate of Soda.—We quote spot, $1.80@$1.85; shipments, $1.75@$1.77, according to position.

Liverpool. Oct. 2.

(Special Correspondence of Joseph P. Brunner & Co.)

There is a healthy tone in heavy chemicals and prices are firm, while at the same time there is no special activity to report at the moment.

Soda ash is steady and buyers have to pay full prices for anything they may want. For tierces, the nearest spot range is about as follows: Leblanc ash, 48%, £4@£4 5s.; 58%, £4 5s.@£4 10s. Ammonia ash, 48%, £3 10s.@£3 15s.; 58%, £3 15s.@£4 per ton, all net cash. Bags, 5s. per ton less. Soda Crystals are in fair request at £2 7s. 6d.@£2 10s. per ton, less 5% for barrels, and 7s. less for bags.

Caustic soda in better demand, nearest spot range is about 60%, £6 5s.@£6 10s.; 70%, £7 5s.@£7 10s.; 74%, £8 5s.@£8 10s.; 76%, £9 7s. 6d.@£9 10s. per ton, net cash.

Bleaching powder is wanted, and outside makes are very scarce. Hardwood packages are quoted at from £7 5s.@£7 10s. per ton, net cash, according to destination.

Chlorate of Potash is very slow of sale, and 4¼d. is the nominal quotation for any position. It is reported that some sales have been made over 1896 at the figure named.

Bicarb. Soda is without change, and the finest quality in 1 cwt. kegs is still held for £6 15s. per ton, less 2½%, with usual allowances for larger packages.

Sulphate of ammonia is still drooping, and £9 3s. 9d.@£9 7s. 6d. per ton, less 2½%, is about nearest spot range for good gray 24 and 25% in double bags f. o. b. here, according to quality.

Nitrate of Soda is slow, at £8@£8 5s. per ton, less 2½%. for double bags f. o. b. here according to quantity and quality.

Carb. Ammonia, lump, 3½d. per lb.; powdered, 3¾d. per lb., less 2½%.

Valparaiso, Chile. Aug. 31.

(Special Report of Jackson Brothers.)

Nitrate of Soda.—Shortly after closing our last circular sellers of this article reduced their limits from 5s. 3d. to 5s. 2½d. for 95% for August-September delivery. At this price exporters were tempted and bought freely until about August 23d, when a reaction was caused by slightly better advices from Europe combined with rumors of the combination under a new basis now under negotiations. At this time 5s. 3d. to 5s. 4d. was successively paid, but only for a limited number of cargoes. For the refined class demand continues reduced, although it is offered at correspondingly lower rates. The market closes weak, with sales of 95% at 5s. 4d. for September delivery, and 5s. 4½d. for October, while 96% can be had at 5s. 5d., September shipment. The price of 5s. 4d. with current freight rates stands in 7s. 4d. per cwt., net cost and freight without purchasing commission. Reported sales for the fortnight include 998,500 quintals.

In freights present disposable tonnage is apparently large, but taking into consideration probable shipments of nitrate up to the end of December there is no probability of lower rates. A fair number of vessels have been taken up for early loading at current rates. We quote for nitrate to United Kingdom, 26s. 3d. per ton; for United States, 27s. 6d. nominal to Hampton Roads or orders.

MINING STOCKS.

Complete quotations will be found on pages 362 and 363 of mining stocks listed and dealt in at:

New York.	Colorado Springs.	Paris, France.
Boston.	Duluth, Minn.	Mexico.
Philadelphia.	Helena, Mont.	Shanghai, China.
Denver, Colo.	Salt Lake, Utah.	Valparaiso, Chile.
Aspen, Colo.	St. Louis.	London, England.

NEW YORK, Friday Evening, Oct. 11.

There seems to be a slightly improved demand for mining stocks in this market, though usually it is a sort of spasmodic inquiry, which comes and goes by fits and starts. Thus, some person just returned from the West will tell his friends about the latest developments in Leadville. The result of his statements is generally an improved demand for those Leadville stocks listed on exchanges here and for a day or two there is some trading. Then the stock relapses into its usual desuetude.

During the week no marked change has taken place in the Comstocks. Of Consolidated California & Virginia 350 shares were sold at $2.65@$2.75. Comstock Tunnel stock was stationary at 8c. with sales of 3,000 shares at this figure. Of Chollar 200 shares were sold at 55c.

There was a solitary transaction of 100 shares of Hale & Norcross at $1.45. News of interest regarding this company will be found elsewhere in this issue. There was a sale of 100 shares of Ophir at $1.65. Sierra Nevada was in some demand and 1,050 shares changed hands this week at 90@93c.

Of the California stocks Brunswick Consolidated shows sales of 300 shares at 11@12c. Quicksilver, common, was stationary at $3, with sales of only 200 shares; of the preferred stock 65 shares were sold at $15@$18.

The Colorado shares were in better request this week. Sales of Leadville Consolidated aggregate 3,100 shares at 12@13c. Lacrosse was firm at 9c. with sales of 2,000 shares. Of Little Chief 1,300 shares changed hands at 13@14c. A block of 1,600 shares of Enterprise, which had not been traded in for some months, was sold this week for 50c. per share.

Horn Silver was quiet this week, only 200 shares being sold at $2. The result of the annual meeting of this company will be found in our mining news columns.

Of Alice, 1,000 shares were sold at 30c.

Shoshone, an Idaho stock which had not been dealt in for some time past, this week shows sales of 800 shares at 1@2c.

Boston. Oct. 10.

(From Our Special Correspondent.)

The market for copper the past week has ruled fairly active with prices from one to six points lower than the previous week. The speculation continues largely in Boston & Montana, which affords larger margins for profits or losses than any other on the list. The extremes for the week were $88 and $82 with sales of about 30,000 shares, closing to-day at 88¾. Butte & Boston was quite strong in the early dealings, selling at $19¼ and gradually

settled to $17¼. A slight rally to-day carried it up to $17⅝ as the closing price.

With the exception of Calumet & Hecla, the large dividend-payers have been heavy, with a decided downward tendency. Calumet & Hecla advanced from $315 to $318, closing at the highest price. Quincy sold down from $143 to $135, with a rally to $138. Tamarack advanced from $147 to $150, but on free offerings and absence of buying orders the price was forced down to $138, with later sale at $139. Osceola declined from $33 to $31 on moderate sales, closing at the latter figure. Franklin sold at $19, a loss of $⅜ for the week. Kearsarge declined from $21½ to $19¼, with a rally to $20 at the close to-day. Tamarack, Jr., was fairly steady, selling at $21¼ and $20¾, and closing at $21. A small sale of Atlantic was reported at $21. Wolverine sold at $8 and declined to $7 on a small volume of business. Tecumseh is firm at $3⅜, at which 100 shares only were sold, the same price being bid for the stock, and offered at $4. Arnold sold at $2⅝@$2⅜. Allouez sold at $1; Centennial at $1¼, and about 1,500 shares Bonanza were taken at 45@55c. per share.

The gold mining shares have been very dull, with the exception of Cripple Creek of which about 5,000 shares changed hands from 87½c. to 60c. Santa Ysabel sold at $12 in a small way and declined to $11. Gold Coin Mining Company sold at $1.15 to $1.05. Merced sold at $34 declined to $29, and rallied to $33. A small lot of Napa Quicksilver sold at $7.

Colorado Springs, Colo. Oct. 5.

(From our Special Correspondent.)

An interesting topic of conversation has been furnished here by the attempts made to establish another mining stock exchange. Prominent brokers say that three exchanges cannot succeed in this town, and express considerable surprise at this latest attempt. The success of the old Exchange leads many inexperienced business men to believe that all they have to do is to start an exchange, and after running it a short time be able to sell out their seats at a large profit. This, however, is not so, and it looks now as if the matter would resolve itself into "the survival of the fittest." That the Colorado Springs Mining Stock Association is prosperous may be seen from the fact that some of its seats have recently sold for high prices. The last sale was to Ramsey C. Bogy & Co., of Denver, who paid $1,000 for it. Prior to that Charles Head & Co., of New York, bought a seat through one of the local brokers, but the price was not made public. William P. Bonbright & Co., recently purchased two seats for which they paid $900 and $1,000. Business on the exchange has been somewhat dull, but the prospects are that an improvement will take place before long.

BY TELEGRAPH.

Messrs. Gardner & Co. wire us the closing quotations for the week ending October 10th as follows:

Name of Company.	4	5	7	8	9	10
Anaconda	.62	.62	.62¼	.63	.66	.66¼
Argentum-Juniata	.63	.63½	.65	.64	.54	.59
Consolidated	.13	.13	.14¼	.15¼	.15	.15
Isabella	.26¾	.26¾	.25	.25	.27	.27
Mollie Gibson	.5	.50	.47	.40	.41	.45
Portland	1.76	1.82	1.98	1.98	1.96	1.95
Summit	.21¼	.24	.24	.26	.34	.34
Union	.20⅝	.21	.23½	.23½	.22	.22

Salt Lake City, Utah. Oct. 5.

(Special Report of James A. Pollock.)

The mining stock market this week showed an almost unprecedented activity, and there was an advance in about every stock on the list. There is a steady and increasing inquiry for stocks, and the confidence displayed is gratifying to investors and operators alike.

Ajax shipped 20 carloads of ore during the month of September. The grade was not very high, but netted a fair profit. A good vein of ore was recently encountered on the east drift of the 200-ft. level. Shares are closely held and but little coming out on open market. Alliance sold at $1.50, and holders are sanguine that the vein will be cut in a short time. There were numerous inquiries for Anchor, but no sales were noted. Bullion Beck is scheduled for a dividend this month. A kindly view of the stock is not taken by the general public, but this attitude seems to be immaterial to present holders, who indicate no anxiety to sell.

Centennial Eureka paid an extra dividend of $1 per share on September 30th, which increases the total amount to $1,320,000, and $360,000 paid this year. The mine continues to make heavy shipments. But little stock is offered and the demand is good for large and small blocks. Comstock is taking no part in the market. Dalton advanced under heavy inside buying and the confirmation of the reported strike of high-grade ore. There is a growing interest in Daly, and Horn Silver slumped off on the passing of the quarterly dividend. The company was in a position to pay, but it was deemed the best policy to add to the cash reserve. Stock was offered at $2.10. Lucky Bill is freely offered.

Mammoth sustains the advance recently made and is in strong demand. Mercur led the market all the week, and by rapid advances reached $4.85, with apparently no stock in sight and with an increasing demand. The recent purchase of the Mattie group of claims adjoining the Mercur property stimulated the buying, which was further increased on the announcement that the capacity of the mill would be increased to 50 tons per day. Ontario lowered during the week to $10 asked and was not in demand. Silver King declares a dividend of 25c. per share, of $37,500, payable October 7th. Utah sold for $1 per share.

San Francisco. Oct. 5.

(From Our Special Correspondent.)

About all that can be said of the market this week s that general dullness characterized it. Prices were weak, most stocks showing declines, which might have been greater had there been interest enough to bring about the fall. There was a marked contrast to the preceding week.

Some closing quotations are as follows: Consolidated California & Virginia, $2.40@$2.45; Confidence, $1.75@$1.80; Ophir, $1.50@$1.55; Hale & Norcross, $1.40@$1.45; Sierra Nevada, 83@84c.; Challenge, 68@69c.; Mexican, 66@67c.; Yellow Jacket, 40@42c.; Savage, 38@40c; Bodie Consolidated, 33@35c.; Bulwer, 6c.; Mono, 10@11c.

Some encouragement has been found in the fact that sales at the stock and exchange board for the last week in September—109,820 shares—were the largest in over three months. The sales for the first nine months of the year compare as follows:

	1894.	1895.
January	240,410	254,315
February	224,750	193,700
March	234,890	285,530
April	463,805	262,810
May	784,205	274,030
June	329,255	234,645
July	178,300	185,395
August	284,545	229,850
September	250,405	333,245
Total	3,020,965	2,257,520

The decrease this year is not very pleasant to contemplate.

It is expected that the plant of the Nevada County Electric Power Company will be finished in about two week.

The annual meeting of the Consolidated California & Virginia Mining Company has been called for October 21st.

The California Miners' Association will hold its annual convention in this city on October 14th. Jacob C. Neff and W. C. Ralston, president and secretary, have declined re election.

BY TELEGRAPH.

SAN FRANCISCO, Cal., Oct. 11.—The opening quotations to-day were as follows: Best & Belcher, 96c.; Bodie Consolidated, 33c.; Bulwer, 5c.; Chollar, 55c.; Consolidated California & Virginia, $2.65; Gould & Curry, 50c.; Hale & Norcross, $1.45; Mexican, 74c.; Mono, 10c.; Ophir, $1.60; Savage, 40c., Sierra Nevada, 93c.; Union Consolidated, 68c.; Yellow Jacket, 49c.

Paris. Sept. 29.

(From Our Special Correspondent.)

The past week, while not prolific of events, shows some changes which may prove to be of moment hereafter. The most marked feature of the market has been an increasing strength in our home stocks. In the metallurgical stocks especially there is a growing demand and prices are strong, while there has also been more buying of the coal and iron shares than for some time past. The exception in coal has been Dombrowa, which has weakened a little from some unexplained cause.

The lead and zinc company's shares continue generally to hold their recent advances, as it becomes apparent that the metals will hold at least a part of the gains in prices which they have exhibited.

The copper shares are also well supported and nearly all of them have risen. Boleo especially is very strong, as the value of the mines and the advances made under the present management are generally appreciated. It begins also to be generally understood that the demand on your side will prevent any very sharp competition with our European producers, and that our imports from America will be necessarily lighter than last year.

It is now fully understood here that the Anaconda transaction is completed, and that the shares of your great company will be quoted on our Bourse in due time. As to the details of the affair you are doubtless better informed than we are.

Huanchaca continues to fall, and I am told that the heaviness of this stock has held back several other silver stocks which were to be brought forward. The Spanish silver-lead companies, however, are generally more in favor.

The syndicate of which I have written you at different times, has put one of its American mines forward. It is Rebecca, a Colorado gold mine, and it makes its first appearance with sufficient modesty, the quotation being 35 fr.

In the South African market there is an uneasy feeling, as it begins to be appreciated that the actual buying of shares for investment which has been so extensive has given way gradually to dealings more speculative in their character. There is more difficulty apparent in carrying stocks, and our financial companies are more cautious in making loans in spite of the abundance of money. Our more careful financiers begin to realize that prices have been forced up to an extraordinary point, especially for the mines whose value is in the future, and for the so-called "banks" and "trusts." As a check on speculation, the directors of the Coulisse have voted to admit no new stocks to dealings from now on to the close of the year. This, of course, will not prevent the continuance of dealings through London, but it may serve as a warning. This South African speculation is far greater in volume than was the Argentine inflation of five years ago.

What will be the result of this present affair? One hesitates at prophecy; we shall see.

The tendency to invest in Russian enterprises is quietly growing, and will, I believe, assume very considerable proportions before long. The management of these new Russian enterprises is in strong hands, and the movement will be helped by the strong pro-Russian feeling which political events have promoted here. Russia is our ally, and why should we not take advantage of her great natural resources? That is what one hears constantly.

The news from our Madagascar expedition is more favorable than for some time past, and success is now looked for, largely through the aid of native treachery and venality. Affairs in the East are still doubtful, but just now they move too slowly to have much effect on business. AZOTE.

MEETINGS.

Cannon Ball Gold Mining Company, annual meeting at the office, 311 Mining Exchange Building, Denver, Colo., October 17th.

Exchequer Mining Company. — Regular annual meeting at the office in San Francisco, October 21st, at 1 p. m. Transfer books close October 18th, at 1 p. m.

Consolidated California & Virginia Mining Company.—Regular annual meeting at the office in San Francisco, October 21st, at 1 p. m. Transfer books close October 17th, at 3 p. m.

DIVIDENDS.

Argentum-Juniata Mining Company, dividend of 3c. per share, payable October 15th.

Centennial Eureka Mining Company, extra dividend of $1 per share, paid September 30th.

Silver King Mining Company, dividend of 25c. per share ($37,000), paid October 7th.

ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dinq.	Sale.	Amt.
Alpha, Con	Nev.	15	Nov. 5	Nov. 26	.10
Alta	"	50	Oct. 21	" 11	.10
Brunswick Con.	Cal.	9	Sept. 30	Oct. 30	.02
Bunker Hill	S. D.	7	Oct. 10	" 30	.02
Golden Gate	Alaska	1	" 21	Nov. 14	.01¼
Gray Eagle	Cal.	41	" 28	" 22	.05
Hite	"	1	Sept. 28	" 17	.08
Mount. T. Grav.	"	7	Oct. 21	" 11	.02
Nevada Queen	Nev.	9	" 16	" 12	.05
Occidental, Con.	"	20	Nov. 4	" 25	.10
Rainbow	S. D.	8	Oct. 14	Oct. 30	.000¾
Seg. Belcher	"	16	" 15	Nov. 4	.10

DIVIDENDS PAID BY MINING COMPANIES, SEPTEMBER AND YEAR 1895.

NAME OF COMPANY.	Location.	Paid in August.	Paid in since Jan. 1.
Am. Dev. & Mg. Co.	Mont.	.....	$24,340
Alaska-Mexican	Alaska	.....	25,500
Alaska-Treadwell	"	.....	150,000
Amethyst	Colo.	.....	36,000
Argentum-Juniata	"	.....	78,000
Bald Butte	Mont.	.....	12,500
Bangkok-Cora Bell	Colo.	3,000	48,000
Belden, F. E. Mica	N. H.	4,000	54,000
Boston & Montana	Mont.	.....	300,000
Bullion-Beck & Champion	Utah.	50,000	325,000
Calumet & Hecla	Mich.	.....	1,000,000
Centennial-Eureka	Utah.	60,000	330,000
Champion	Cal.	3,400	27,200
Con. Cal & Va	Nev.	.....	162,000
Copper Queen Con.	Ariz.	.....	150,000
Coptis	Nev	.....	1,000
De Lamar	Idaho.	.....	444,000
Elkhorn	Mont.	.....	50,000
Elkton	Colo.	.....	7,500
Forepaugh	"	.....	16,000
Gold & Globe	"	.....	11,250
Golden Fleece	"	.....	90,000
Hecla Con.	Mont.	.....	115,000
Homestake	So. Dak.	31,250	250,000
Hope of St. Louis	Mont.	.....	10,000
Horn Silver	Utah	.....	100,000
Iron Mountain	Mont.	.....	90,000
Jackson	Cal.	.....	2,000
Kennedy	"	.....	184,000
Mayflower Gravel	"	.....	48,000
Mercur	Utah	25,000	175,000
Mollie Gibson	Colo.	.....	50,000
Montana, Ltd	Mont.	.....	82,500
Mont. Ore Purchasing Co.	"	40,000	160,000
Morning Star Drift	Cal.	9,600	144,000
Moulton	Mont.	.....	30,000
Mt. Rosa	Colo.	.....	5,000
Napa Con. (Quicksilver)	Cal.	.....	70,000
Nugget	Colo.	.....	5,000
Osceola Con	Mich.	.....	100,000
Portland	Colo.	.....	120,000
Quincy	Mich.	.....	600,000
Silver King	Utah.	37,500	150,000
Smuggler	Colo	.....	350,000
Standard	Cal.	.....	20,000
Tamarack	Mich.	.....	200,000
Union	Colo	.....	12,500
Utah	Utah.	2,000	13,000
Victor	Colo.	.....	180,000
Victor L. & M. Co.	"	.....	6,000
War Eagle	B. C.	.....	132,500
W. Y. O. D.	Cal.	.....	24,000
Total		$265,750	$6,750,790

Readers of the "Engineering and Mining Journal" will confer a favor on the publishers if they will notify the "Journal" of any errors or omissions in the above table.

STOCK QUOTATIONS.

COLORADO SPRINGS, COLO.*

Name of Company.†	Par val	Sept. 30. B.	Sept. 30. A.	Oct. 1. B.	Oct. 1. A.	Oct. 2. B.	Oct. 2. A.	Oct. 3. B.	Oct. 3. A.	Oct. 4. B.	Oct. 4. A.	Oct. 5. B.	Oct. 5. A.	Sales.
Anaconda	$5	.59	.61	.61	.65	.61	.64	.62½	.63	.61	.61¾	.61	.62	1,500
Anchoria-L	1	1.35	1.80	1.25	2.00	1.25	2.00	1.25	2.00	1.35	1.68	1.90	1.90	1,000
Aola	1	.02¼	.02½	.02	.02½	.02125	.03½	.02½	.02¾	.02½	.02¾	.02	.02¾	43,400
Arapahoe	2	.71¼	.72	.69½	.70	.69¼	.70	.67½	.68	.63½	.65½	.62½	.63	13,401
Bankers	1	.08¼	.09	.08¼	.09½	.08¾	.09	.08¼	.09	.08¼	.09¾	.09¾	.09	13,250
Ben Hur	1	.06¼	.06½	.06¼	.06¾	.05¾	.06¼	.05¾	.06	.05875	.06	.05¼	.05¾	6,000
Blue Bell	1	.07¼		.07½	.07¾	.06¾	.07½	.07½	.07¾	.07	.08	.06½	.07½	8,400
Bob Lee	1	.01¾	.01¾	.01¾	.01¾	.01	.01¼	.10	.12½	.10	.11	.01	.01¼	24,000
Buckhorn	1	.04	.04½	.04	.04½	.03¾	.05¼	.03¾	.04½	.04	.04½	.03¾	.05	8,500
Calumet	1	.09	.10					.10	.10½					18,000
C K. & N	1	.07	.085	.08	.0875	.085	.095	.0 8¾	.09	.05	.06¾	.07	.06250	26, 00
Colo.C.& M.	1	.02¾	.02¼	.02¾	.02¾	.0 8¼	.02875	.02¾	.02875	.02¾	.03¼	.02¾	.02875	21,000
Columbine	1	.02¾	.03¼	.02½	.02¾	.02¾	.02½	.0 3¾	.03¼	.01875	.02	.01¾	.02	1,0 0
Copper M	1	.02¾	.02½	.02¾	.02¾	.02¾	.02½	.02¼	.02¾	.02	.02¾	.....	.02¾	9,000
C. C. Con.	1	.15¾	.15¾	.14¾	....	.13½	.15¾	.12¾	.13	.13¼	.13¾	.13	.13¼	45,000
Cr. & C. C.	1	.03½	.03¾	.03¾	.03¾	.03¼	.15¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	11,200
Des Moines	1	.02¾	.02¼	.02½	.0 3¼	.02¾	.02¾	.02¼	.02¾	.02½	.02625	.02¾	.02½	4,000
Enterprise	1	.10¾	.11¼	.09	.10¾	.09¼	.09¾	.09¼	.10	.09¼	.09¾	.09¼	.09¾	3,7 0
Eureka	1	.08			.11	.075	.085	.07	.08¾	.07	.08	.0 7	.08	5, 00
Fanny B	1	.04	.06	.04	.06	.03¾	.06	.03¾	....	.03¾	.05	.003	.006	15,000
Franklin	1	.....	.....	.11	.11½	.10¾	.11	.10	.....	.10	.11	.01050	.10.5	27,000
Free Coin	1	.....	.....	.....	.....	.....	.0 3¼	.....	.....	.....	.15¾	.....	.....	.....
Garfield-Gr	1	.03½	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03625	.01	.03½	.03¾	.03¾	15,500
Gold & Gl	1	.14¾	.15½	.14¾	.15¼	.15	.15¼	.15	.15¼	.15	.15¼	.15	.15½	10,700
Gold Eagle	1	.....	.01¾	.125	.135	.125	13	.12	.13	.1225	.1225	.01250	.013	10,000
Golden Age	1	.0 3¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01625	.01¼	.162	.01¾	.01¾	32, 00
Gold King	1	.52	.55	.52	.60	.35	.56	.54½	.58	.53½	.60	.53½	.60	500
Gold Res	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Stand	1	.12	.12¼	.11¾	.11¾	.011	.0112	.10¾	.11¼	.10	.10¾	.10¾	.10¾	103, 00
Golostone	1	.0095	.01¾	.055	.105	.05	.....	.09	.105	.085¾	.10	.008	.00950	20,'00
Gould	1	.....	.....	.08¾	.09¾	.08¾	.08¾	.08¾	.08¾	.08	.09¾	.08	.09¾	12,000
Gran. Hill	1	.02¼	.02¾	.01¾	.02¾	.....	.02¼	.0 3¾	.....	.01¾	.2¼	.01¾	.....	1,000
Isabella	1	.2 4¾	.27	.26	.26¼	.25¾	.25¾	.....	.26	.....	.26¾	.26	.26¼	15,000
Jack Pot	1	.04¾	.0 4¾	.05	.05¼	.04¾	.05	.04¾	.05¼	.04¾	.05	.04¾	.05	24,200
Keystone	1	.04½	.4¾	.04¾	.04¾	.04¾	.04¾	.04½	.04¾	.04	.04875	.4	.04¾	7,000
Ladessa	1	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01	.01¾	.01¾	.01¾	6,000
Maggie B	1	.06	.0625	.0625	.065	.05	.06	.06	.0625	.05	.065	.00625	.00575	24,000
Magna Ch	1	.02¾	.02¾	.02	.02¼	.02	.02¼	.02	.....	.02¼	.02¾	.02¾	.02¾	12,750
Matt Fr'ce	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mollie G	5	.54	.58	.....	.59¾	.50	.55	.49	.54	.48¾	.51¾	48	.51	500
Mt. Rosa	1	.....	.11¾	.....	.12	.09¾	.09875	.09	.10	.09¾	.10	.10¾	11	2,000
Mutual	1	.05	.05¾	.05¾	.05¾	.04¾	.05¼	.05	.0 3¾	.05	.05½	.04¾	.05¼	10,000
Nugget	1	.11¾	.12¾	.11¾	.12	.11	.11¾	.....	.12	.10¾	.11¾	.10¾	.12	6,000
Ophir	1	.04	.06	.05	.06	.04¾	.06	.04¾	.05	.04¾	.06	.04¾	.06¾	.....
Ore Grinde	1	.....	.....	.02	.0575	.....	.....	.01¾	.0225	.01	.02	.0 0150	.00250	17,00
Orphan Belle	1	.09	.10	.09	.09¾	.....	.09¾	.08	.....	.08¾	.09¼	.08¾	.09¼	1,000
Pharmacist	1	.05	.05¾	.04¾	.05	.04¾	.04¾	.04¾	.05	.04½	.05	.04¾	.04¾	10,500
Portland	1	1.69		1.68½	1.71	1.70	1.70¾	1.70	1.72	1.74½	1.76	1.80	1.82	1,400
Princes E.	1	.06	.065	.0525	.0925	.05¾	.0 5	.0525	.0575	.05	.055	.005	.00550	8,000
Sacramento	1	.04¾	.05	.05	.0 6¾	.04¾	.05	.04¾	.05	.04¾	.04¾	.04¼	.04¾	38,500
Santa Fe	10	.0875	.01	.0825	.0975	.0 5¾	.0 3¾	.09	.....	.08	.....	.008	.009	.....
Silv. State	1	.2¼	.02¾	.02125	.02¾	.01¾	.0225	.01875	.....	.02	.02¾	.2	.02¾	25,000
Star of W	1	.01¾	.1¼	.01¾	.1¼	.01¼	.01¾	.01¼	.01¾	.01	.02	.01¼	.01¾	25,000
Summit	1	.....	.23	.....	.24	.19¾	.20	.15	.27	.22	.23¾	.22	.23¾	5,50
Union	1	.21¾	.22	.21	.21¾	.....	.....	.20	.21¾	.20¾	.22	.20¾	.22	7,000
Union Leas.	1	.40	.41	.40	.41	.40	.40½	.39	.41	.....	.....	.33	.38	1,200
Union Pac	1	.....	.....	.....	.....	.....	.....	.....	.02¾	.01¾	.....	.....	.002	.....
Virginia M	1	.03¼	.03¼	.03	.03¼	.02875	.03	.....	.03	.02¾	.02¾	.02¾	.02¼	11,500
Wh. of For	1	.0475	.0525	.0475	.05	.04¾	.0525	.0475	.05	.05¾	.055	.0 525	.00500	80,000
Work	1	.05¾		.05¾	.06¼	.....	.06¼	.....	.6¼	.02	.06¼	.....	.6¼	3,000
World	1	.02	.02¼	.02	.....	.02	.02¼	.02	.02¼	.01¾	.02	.0 3¾	.02	3,000

*Official quotations Colo. Spr'gs B'd of Trade & Mg. Exch. †All the companies are located in Colo. Sales: listed, 754 151; miscellaneous, 455,650; total cash value, $87,706.47.

COLORADO SPRINGS COLO.*

Name of Company.‡	Par val	Oct. 1. H.	Oct. 1. L.	Oct. 2. H.	Oct. 2. L.	Oct. 3. H.	Oct. 3. L.	Oct. 4. H.	Oct. 4. L.	Oct. 5. H.	Oct. 5. L.	Oct. 7 H.	Oct. 7 L.	Sales
Alamo	$1	.04¾	.04¾	.04¾	.04¾	.04½	.04¾	.04½	.05	.04625	.05	.....	.....	9,000
Anaconda	5	.62	.63¾	.61	.66	.62	.63¾	.61¾	.63¼	.61	.62	.62½	.61	5,114
Argentum J	2	.63¾	.69	.68	.68¾	.67	.67¾	.62¾	.63	.6 625	.64	.67	.65	62,950
Bob Lee	1	.01¾	.01¾	.01	.01¾	01	.01¾	.....	.01¾	.01	.01¾	.01¾	.01¾	22,700
C. O. D	1	.04	.05¾	.....	.05¾	.....	.....	.04	.....	.04	.....	.....	.....	.....
Cripple C. C.	1	.14¾	.15	.13	.13¾	.11¾	.13	.12¾	.13¼	.13	.13¼	.13¾	.13¾	17,700
Cr. & C. C.	1	.03¾	.03¾	.03¼	.03¾	.03¾	0 .3¾	.03¼	.03¾	.03¾	.03¾	.03¾	.03¾	18,600
Cr. Creek Ex	1	.15	.20	15	.20	15	.20	15	20	.....	.....	.....	.....	.....
Favorite	1	.07¾	.07	.06¼	.07	.06¼	.06¾	.08	.06	.07	.....	.....	.....	6,300
Franklin	1	.01	.01¾	.01	.01¾	.01	.01¼	.01	.01¾	.01	.01¾	.....	.....	1,000
Fanny B	1	.09¾	.09¾	.08¾	.09	.09¾	.0875	.09	.09	.8¾	.09¾	.....	.....	8,000
Gold & Gl	1	.15	.15¾	.14¾	.15¾	.14¾	.15¾	.15¾	.15¾	.15¾	.....	.15¾	.15½	5,500
Isabella	1	.26¾	.2 5¾	.26	.26¾	.25¼	.26	.25¾	.26¾	.25¾	.26¾	.27	.25	17,650
" stamp		.23	.26	24	.25¼	.22½	.25	.24¼	.25¾	.24¼	.26½	.....	.....	.....
Mollie G	5	.54½	.55	.51¾	.54	.5	.53	.49¾	.52	.49	.50	.49	.47	4,125
Mt. Rosa	1	.10¾	.10¾	.09¾	.10¾	.10¾	.10	.09¾	.09¾	.1 9	.12½	.12½	.12	11,400
Pharmacist	1	.....	.....	.....	.04¾.5	.04¾	.05	.4¾	.0 7875	.04¾	.04875	.....	.....	10,600
Portland	1	1.69½	1.69¾	.69	1.71	1.70	1.75	1.75	.....	1.82	1.85	1.96	1.90	8,150
Rebecca		5.50	6.5	5 50	6.50	5.50	6.51	5 50	6.50	2.00	6 50	.....	.....	500
Specimen	1	.16¾	.17¾	.16¾	17	.16¾	.17¾	.16875	.17	.16¾	.17¼	.17	.17	24,700
Summit	1	.18¾	.20¾	.19¼	19¼	20	20¾	.....	.....	.23	.24¼	.24	.23¾	9,7 0
Union	1	.21¾	.21¾	.2 4¾	.2	.20¾	.21¾	.19¾	.21	.21	.21¾	.....	.....	8,50
Work	1	.....	.....	.5875	.06¾	.05¾	.06	.....	.....	.05 75	.06¾	.....	.....	4,100

* Official quotations Colorado Springs Mining Stock Association ‡ All the companies are located in Colorado. Total sales, listed, 256,759; unlisted, 415,070; value listed, $89,536.

SAN FRANCISCO, CAL.*

Name of Company.	Location.	Par.	Oct. 5	Oct. 7	Oct. 8	Oct. 9	Oct. 10	Oct. 11
Alta	Nev.	100	.09	.9	09	.10	.09	.....
Belcher	"	100	.5	.50	.49	.54	.8	.....
Best & Belcher	"	100	.92	.92	.93	.97	.96	.96
Bodie Con	Cal.	100	.34	.34	.32	.33	.35	.34
Buiwer	"	100	.....	.....	.06	.05	.05	.05
Dollar	Nev.	100	.53	.53	.55	.56	.55	.55
Con. Cal. & Va	"	100	2.40	2.40	2.6	2.0	2.80	2.65
Crown Point	"	100	.42	.42	.42	.42	.43	.....
Gould & Curry	"	100	.42	.42	.46	.46	.51	.50
Hale & Norcross	"	100	1.4	1.40	1.40	1.40	1.45	1.45
Mexican	"	100	.67	.67	.65	.75	.74	.74
Mono	Cal.	100	.....	.....	.10	.11	.11	.10
Ophir	Nev.	100	1.50	1.50	1.55	1.60	1.60	1.60
Potosi	"	100	.62	.62	.68	.6	.66	.....
Savage	"	100	.37	.37	.37	.39	.40	.40
Sierra Nevada	"	100	.85	.86	.84	.9	.96	.93
Union Con	"	100	.56	.56	.54	.60	.67	.68
Utah	"	100	.06	.06	.07	.09	.08	.....
Yellow Jacket	"	100	.43	.43	.43	.45	.48	.49

* Official quotations San Francisco Stock Exchange.

PITTSBURG, PA.*

Name of Company.	Location.	Par Val'e	Oct. 4. B.	Oct. 4. A.	Oct. 5. B.	Oct. 5. A.	Oct. 7. B.	Oct. 7. A	Oct. 8. B	Oct. 8. A	Oct. 9. B.	Oct. 9. A.	Oct. 10. B.	Oct. 10. A.	Sales
COAL:															
Chartiers Bl'ck	Pa.	50					40								
Mansfield C. & C	"	50					40						35		15
N. Y. & C. Gas Co	"		35				36						35		
Standard	"	50													
MINING:															
Enterprise	Colo.	5													
Hidalgo	Mex.	10													
Lustre	"	10					10	11¾		11¾	10¾		12		
Red Cloud	Id'ho	5													
Silverton	Colo.	10													
Yankee Girl	"	10													
MISCELLANEOUS															
Carborum. Mfg	Pa.	100													
NATURAL GAS:															
Allegheny	Pa.	100													
Chartiers Val	"	100					7¾	8¼	7¾	8¼		8¼	7¾	8¼	
Manufacturers	"	100													
Ohio Valley	W.V.	50													
People's N. Gas	Pa	50													
People's P'p'ge	"	25					12¾				18	12¾	18		
Pennsylvan'a	"	50					3	4½	3	4¼					
Philadelphia	"	50	15¼	15¾	15¾	1 4¼	15¾	15¾	15¾	15¾	15¼	15¾	15¾	15¾	2,185
Wheeling	W.V.	50	17½	18	17¾	18							17½	18	

* Official quotations Pittsburg Stock Exchange. Total shares sold, 2,200.

NEW YORK.*

Name of Company.	Location.	Par val.	Oct. 5. H.	Oct. 5. L.	Oct. 7. H.	Oct. 7. L.	Oct. 8. H.	Oct. 8. L.	Oct. 9. H.	Oct. 9. L.	Oct. 10. H.	Oct. 10. L.	Oct. 11. H.	Oct. 11. L.	Sales
Alice	Mont.	25	.....	.....	.....	.....	.....	.....	.....	.....	.3)	.....	.....	.....	1,00
Alta	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
American Flag	Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belcher	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Best & Belcher	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bodie Con	Cal.	100	.....	.....	.....	.....	.....	.08	.....	.....	.....	.....	.....	.....	3,000
Breece	Mich.	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brunswick	Cal.	2	.....	.....	.....	.....	.....	.....	.....	.....	.12	.....	.11	.....	300
Bulwer	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Caledonia	S. Dak	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ch ltar	Nev.	100	.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Chrysolite	Colo.	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Comstock T.	Nev.	100	.....	.....	.....	.....	.....	.08	.....	.....	.....	.....	.....	.....	3,000
do. Bonds	"		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
C n. Cal. & Va	"	100	2.65	.....	.....	.....	.....	.....	.....	2.75	.....	.....	.....	2.75	350
Crown Point	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Daly	Utah.	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deadw'd-Terra.	S. Dak	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
El Cristo	R Col.	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Enterprise	Colo.	5	.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Eureka Con	Nev.	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,000
Father De Smet	S. Dak	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Freeland	Colo.	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gould & Curry	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hale & Norcross	"	100	.....	.....	.....	.....	.....	.....	.....	1.45	.....	.....	.....	.....	100
Homestake	S. Dak	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Horn Silver	Utah.	25	2.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Iron Silver	Colo.	20	.....	.....	.....	.....	.....	.25	.....	.....	.....	.....	.....	.....	100
Isabella	"	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
K. & Pembroke	Nev.	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lacrosse	Colo.	10	.....	.....	.....	.....	.....	.....	.....	.....	.09	.....	.....	.....	2,000
Leadville Con	"	10	.....	.....	.....	.....	.12	.....	.....	.....	.13	.12	.13	.....	3,100
Little Chief	"	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.14	.13	1,300
Mexican	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mollie Gibson	Colo.	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mono	Cal.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontario	Utah.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ophir	Nev.	100	.....	.....	.....	.....	.....	.....	.....	1.65	.....	.....	.....	.....	100
Phoenix Con	Ariz.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland	Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potsi	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth Con	al.	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quicksilver	"	100	.....	.....	.....	.....	.....	.....	.....	.....	3.0	.....	.....	.....	200
do. pref.	"	100	18.00	.....	18.00	.....	.....	.....	.....	.....	.....	18.00	.....	.....	65
Savage	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shoshone	Idaho	1	.....	.....	.....	.....	.....	.....	.....	.2	.01	.....	.....	.....	800
Sierra Nevada	"	100	.....	.....	.....	.....	.....	.....	.....	.90	.....	.....	.93	.90	1,050
Standard	Cal.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union Con	Colo	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Utah	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Victor	Colo	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yellow Jacket	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Official quotations N. Y. and Con. Stock and Petroleum Exchanges. Total shares sold, 15,165

BOSTON, MASS.*

Name of Company.	Location.	Par val.	Oct. 4. H.	Oct. 4. L.	Oct. 5. H.	Oct. 5. L.	Oct. 7. H.	Oct. 7. L.	Oct. 8. H.	Oct. 8. L.	Oct. 9. H.	Oct. 9. L.	Oct. 10. H.	Oct. 10. L.	Sales
Allouez	Mich.	25	.....	.....	.....	.....	1 00	.....	1.00	.....	.....	.....	.....	.....	600
Arnold	"	25	2.75	2.63	2 75	.....	2.63	2.50	.....	.....	.....	.....	.....	.....	850
Atlantic	"	25	.....	.....	21.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	10
Bonanza	"	10	.55	50	.....	.....	.....	.....	.....	.45	.....	.....	.....	.....	1,400
Bost. & C. C	Colo.	1	1.0	.20	.85	.75	.80	.70	.70	.65	.....	.....	.60	.....	4,250
Bost. & Mont	Mont.	25	88.00	85.75	86.62	84.75	85.00	82.75	84.00	82.50	84.0	82.50	84.25	82.50	20,9,8
Breece (Iron)	Mich	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brunsw. (Man.)		25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Butte & Bost	Mont.	25	19.38	18.75	18.50	18.25	18.00	17.75	17.75	17.25	18.00	17.50	18.00	17.75	3,522
Cal. & Hecla	Mich.	25	317	.....	315	.....	315	.....	317	.....	317	316¼	318	317	87
Cataipa (Silver)	olo.	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Centennial	Mich.	25	1.25	.....	1.25	.....	.....	.....	1.25	.....	1 25	.....	1.25	.....	720
Central	"	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cœur d'Alene	Idaho	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper Falls	aich.	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crescent (Silv.)	Colo.	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dominion Coal	N. S.	100	16.00	15.75	.....	.....	15.75	15.50	15.50	15.38	15.50	.....	15.25	.....	1,820
do. pref.		100	.....	.....	.....	.....	.....	.....	97 00	.....	.....	.....	97.50	.....	24
Franklin	Mich.	25	.....	.....	.....	.....	.....	.....	19.00	.....	.....	.....	19.0	.....	200
Grand Riv. Con	Ky.	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Honorine (Silv.)	Utah.	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ill. Steel	Ill.	100	82 00	81.00	81.50	.....	81 50	80 50	80.00	78.50	.....	.....	80.00	79.50	1,903
Gold Coin	Utah.	1	1.15	1 10	1.15	.....	.....	.....	1.05	.....	.....	.....	.....	.....	900
Kearsarge	Mich.	25	21.50	21.75	20.63	.....	20.00	19.5	19.25	.....	.....	.....	20.00	19.63	4,915
Lake Sup. Iron.		25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Merced	Cal.	100	.....	.....	.....	.....	35.00	.....	30 00	29.00	33.00	32.00	33.00	.....	195
Minnesota (Ir.)	Minn.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Napa	Cal	7	7.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52
National	Mich.	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osceola	"	25	33.00	.....	32.75	32.0	33.00	32.50	33.00	31.00	31.00	.....	.....	.....	741
Pontiac	"	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	"	25	142	.....	141	.....	140	139	.....	.....	.....	.....	137	135	114
do. scrip	"		.....	.....	.....	.....	.....	.....	76.0	.....	79.75	.....	.....	.....	30
St. Mary's C. M.	"	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Santa Rosa	Colo.	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San. Ysabel (G.)	Cal.	5	.....	.....	12.00	.....	12.00	11.50	11.00	.....	.....	.....	.....	.....	350
Tamarack	Mich	25	147	145	145	.....	150	145	149	145	145	138	140	138

STOCK QUOTATIONS.

DENVER, COLO.* Week ending Oct. 5.

NAME OF COMPANY.	Location.	Par value.	Opening	Highest.	Lowest.	Closing. Bid.	Closing. Ask.	Sales.
Addie C	Cripple Creek, Colo.	$1	.009½	.0 2½	.009½	009¾	.0 2½	82, 00
Alamo	" " "	1	.043⅛	.05	.14	.04	045⅛	10,000
Amity	" " "	1	.006	.009	.006¾	.007	.008	20,000
Anaconda	" " "	5	.61	.67	.60	.60	.63¾	
Aola	" " "	1	.02	.0 ¾	.01¾	.01¾	.02¾	7,500
Argentum Juniata	Aspen,	1	.69¼	.71¾	.62¾	.62¾	.65	9,900
Bangkok	Leadville.	1	.12½	.13	.10	.10	.11¾	4,600
Bankers	Cripple Creek,	1	.08¾	.09	.08	.08	.08¾	62,700
Big S x	" " "	1	.06	.07	.5	.05	.06¾	4,600
Bob Lee	" " "	1	.01¾	.01¾	.01¾			4,0 0
Boston-Idaho	Leadville,	1	.2	.2	.27	24	.27	2,000
Colo. City & M	" "	1	.02⅝	.03½	.02¼	.02¾	.03	12,5 0
C. O. D	Cripple Creek,	1						
Creed & Cripple Creek	" "	1	.03¾	.03¾	.03¼	03¾	.03¾	10,000
Cripple Creek Con	" "	1	.14⅜	.15½	.12⅜	.13¾	.15	11, 00
Eclipse	" "	1	.06¼	.06¾	.05	.05	.05¾	86,000
Fanny Raw	Leadville,	1						
Forepaugh	Cripple Creek,	1	.20	.40	.20		.35	
Garfield Grouse	Leadville,	1	.03¼	.03¾	.03¼	.03¾	.03¼	21,170
Gold & Globe	Cripple Creek,	1	.14½	.16	.14	.14	.16	5,000
Gold Standard	" "	1	.11¾	.12¼	.10	.10	.1 ⅜	40,000
Isabella	" "	1	.23½	27	.25	.25¾	.26½	
Jack Pot	" "	1	.04¾	.05¾	14	.04¾	.5¾	1,000
Justice	" "	1	.07	.09	.04¾	.04¾	.04¾	18,000
Keystone	" "	1	.04	.05	.03¾	.03¾	.05	1,000
Ladessa	" "	1	.01¾	.0 ¾	.01	.01	.01¾	4,000
Mollie Gibson	Aspen,	5	.58¾	.61	.40	.40	.52	1,700
Mt. Rosa	Cripple Creek,	1	.1	.11¾	.09½	.10	.10¾	13,000
New Zealand	Leadville,	1	.03¾	.06	.03¾	.04¾	.06	1,000
Nuget	Cripple Creek,	1	.12	.14¾	.10	.10		1,000
Pharmacist	" "	1	.05	.0 ¾	.04	.04	.05¾	9, 0
Portland	" "	1	1.67	1.82	1.62¾	1.8	1.82	300
Reno	" "	1	.02	.03¾	.2	.0 ¾	.03	18,000
Smuggler	Aspen,	1	1.00	1.40	.75	.75	1.40	
Specimen	Cripple Creek,	1						
Star of the West	" "	1	.01⅝	.01¾	.01	.01	.01¾	18,000
Summit	" "	1						
Union Gold	" "	1	.40	.22	.6	.18	.22	
Union Leasing	" "	1	.40	43	35	.35	.40	700
Wheel of Fortune	" "	1	.005	.06	.005	005¾	.06	137,000
Work	" "	1	.6½	.07	.5¾	.05¾	.06¾	6, 0 0

*Official quotations Colo. Mining Stock Exch'ge. Total sales: listed, 622,870; unlisted 1, 125,750.

PHILADELPHIA, PA.*

NAME OF COMPANY.	Location.	Par Val'e	Oct. 3. B.	Oct. 3. A.	Oct. 4. B.	Oct. 4. A.	Oct. 5. B.	Oct. 5. A.	Oct. 7. B.	Oct. 7. A.	Oct. 8. B.	Oct. 8. A.	Oct. 9. B.	Oct. 9. A.	Sales
Bethlehem Ir.	Pa.			80				80		80		83			
Bloom. C. & C	"	50													
Cambria Iron.	"	50	53¾	55			54¼	54⅝	54¼		53¾	54	56⅛	56¾	1669
" Receipts	"	50					54¼				54		56	56⅝	419
Cent. Coal & C.	"	100													
C., O. & Gif. Vt. Tst Ctfs.	I. T.	50	15⅛	15¾			15¼		15¼		15⅛		15⅛	15⅝	894
Fl. Top C.L. As.	W.V.	100						16		16		16			
" pref.	"	100													
Hunt & Br. op.	Pa.	50		31½				31¾		31¾		31			
" pref.	"	50		54				54		54		53¾	54¼		52
Hutchinson C.	"														
" pref.	"														
Lehigh C & N.	"	50	48¾	49¼			48¾	49	48	49	48¾	49¼	48¾	49	52
Lehigh Valley.	"	50	43¾	42½			41¾	42¼	41¾	42	41¾	41¾	41⅝	41¾	817
Little Sch'ykill	"	50	64½				64¾		64¾		64				68
Penn Gas Coal	"	50													
Penna. R. R.	"	50	55⅛	56			55⅜	55¾	55⅝	55¼	55⅞	55⅝	55¼		464
Penna Salt	"	50	98				98		98						
Pa. Steel fd rc.	"							16¼	170	192		194	19		78
" comp.	"		40	40¾			42¼	45	50	52¾		50	5		1381
" pfd.	"							75	90	85			88		75
Westmor'd C	"	50		54				52¾		51¾		51¾			
Wyo. Valley C.	"	100													

* Official quotations Philadelphia Stock Exchange. Total shares sold, 5,944.

SALT LAKE CITY, UTAH.* Week ending Oct.

Name of Company.†	Par value.	Bid.	Asked.	Actual selling price.	Name of Company.	Par value.	Bid.	Asked.	Actual selling price.
Ajax	$10	$0.25	$0.40	$0.37½	Daly	$20	$6.25	$7.00	$6 75
Alliance	1	1.35	1.50	1.45	Daly West	20	6.25	6.75	6.50
Amer. Nat Gas.	10	.05	.15	.12½	Horn Silver	25	1.85	2.00	2.00
Anchor	20	3.10	3.35	3.25	Mammoth	25	1.12½	1 35	1.27½
Bogan	1	.15	.40	.25	Mercur	25	4.95	5 25	5.00
Bullion Beck & C.	10	7.50	9.00	8.75	Morgan	125	.50	.75	.65
Cane Springs	5		.85		Ontario	100	9.00	10.00	10.00
Centen'l Eureka.	50	55.00	62.00	60.00	Silver King	20	14.25	14.75	14.50
Cleveland Con.	1		.50		Tetro	1		.21	.10
Comstock	25	.50	1.00	.75	Utah	1	.90	1.00	1.00
Dalton	5	.04	.07	.06	Utah Lime	10	3.50	4.25	4.00

* Special report of James A. Pollock. † All the companies are located in Utah.

BALTIMORE, MD.*

NAME OF COMPANY.	Location.	Par value.	Oct. 4	Oct. 5.	Oct. 7.	Oct. 8	Oct 9.	Oct. 10.
Balt. & North Carolina	N. C	5						
Baltimore Mining & Smelting Co	"							
Conrad Hill	"	5						
Ge rge's Creek Coal	Md.	100	103¾	103¾	103¾	103¾	104	104
Howard Coal & Coke	"	5						
Lake Lbrome	"	5						
Ore K'nb	"	10						
Silver Valley	N. C	5	20	20	20	30	20	20
Vernon Mining		5						

* Official quotations Baltimore Stock Exchange.

DULUTH, MINN.* Week ending Oct. 5.

NAME OF COMPANY.	Location.	Company's Office.	Par value.	Bid.	Ask.	Price
Adams Iron	St. Louis Co., Minn	Duluth, Minn	100	$3.00		
Biwabik Mt. Iron	" " "	" "	100	21.0	$22.50	
Lake Superior Con	" " "	" "	100	16.00	18 00	$16.50
Mesabi Chief	" " "	" "	100	1.75	2.00	
Minnesota Iron	" " "	New York City	100	70.00	72 50	
Mountain Iron	" " "	Duluth, Minn.	100	62.00	68.00	66.00

* Official quotations Duluth Board of Trade.

SHANGHAI, CHINA.* Sept. 6.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelebu Mg. & Trad	China	45,000	$5	$5	Oct., 1894	$0.25	Taels 2.63
Punjom Mg. Co., Ltd.	"	58,850	4	3¾			" 3.25
do. pref	"	28,570	1	1			" 1.02
RaubA'man G. Mg. Co.	"	200,000	£1	13s. 10d.	Dec., 1893	10½d.	" 2.62
Sheridan Con. Mg. Co.	Colorado, S.U.	20,0 0	Taels 100	Taels 100			" 4.00

* Special Report of J. P. Bissett & Co. The prices quoted are in Shanghai taels.

LONDON. Sept. 27.

NAME OF COMPANY.	Country	Product.	Capital stock.	Par value.	Last div.	Date.	Quotations. Buyers	Quotations. Sellers.
AMERICANS:				£ s. d.	s. d.		£ s. d.	£ s. d.
Alaska-Mexican	Alaska	Gold	£160,000	1 0 0	0 7 1-5	July, 189	2 0 0	2 2 6
Alaska Treadwell	"	"	1,0 0,0 0	5 0 0	1 6	"	4 12 6	4 17 6
De Lamar	Idaho	Gold&silver	400,000	0 0 1	1 0	Aug.	1 3 0	1 4 0
Elkhorn	Montana	Silver	200,000	1 0 0	0 3	July		
Harquahala	Ariz na	Gold	30,0 0 0	1 0 0	0 6	Oct. 1894	4 6	5 0
Holcomb Valley	California	"	140,400	5 0			2 0	2 6
Jay Hawk	Montana	"	285,000	1 0 0	0 6	Dec., 1892	1 0	2 0
Montana	"	Gold&silver	657,158	1 0 0	0 3	Oct., 1895	10 0	11 0
New Guston	Colorado	Silv r	110,000	1 0 0	1 0	" 1892	12 6	17 6
Palmarejo	Mexico	Gold&silver	80,0 0 0	1 0 0				
Plumas-Eureka	Colorado	Gold	281,250	2 0 0	0 6	June, 1894	10 0	12 6
Poorman	Idaho	Gold&silver	200,000	5 0			4 0	4 6
Richmond	Nevada	Gold&silver	270,000	5 0 0	1 0	Nov., 1894	1 0 0	1 5 0
Sierra Buttes	Calfornia	Gold	245,0 0	2 0 0	0 6	April, 189		
Springdale	Colorado	"	200,0 0	4	0 2	Aug., 1894	1 9	2 3
SOUTH AMERICANS:								
Colombian Hydra'lic	Colombia	Gold	80,0 0	1 0 0	1 0	July, 1895	8 9	11 3
Frontino & Bolivia	"	"	14 ,0 0	1 0 0	1 0	Aug. "	1 3 9	1 12 6
Tolima, A shares	"	Silver	70, 00	5 0	10 0	" "	7 15 0	8 5 0
" B "	"	"	30,000	5 0	10 0	" "	6 0 0	6 5 0
COPPER STOCKS:								
Cape Copper	So. Africa	Copper	610,000	2 0 0	1 3	June, "	2 11 3	2 13 9
" pref	"	"	90,0 0	2 0 0	1 3	" "	2 10 0	2 15 0
Copiapo	Chile	"	200,000	2 0 0	1 6	May "	2 0 0	2 5 0
Rio Tinto	Spain	"	3,2 0,000	1 0 0	4 0	July "	18 15 0	19 0 0
Tharsis	"	Sulpr&cop'r	1,2 0,000	4 0 0	4 0	May "	5 0 0	5 5 0
AUSTRALIANS:								
Bayley's Reward	Coolg'rdie	Gold	480,000	1 0 0	4 0	Dec., 1894	8 6	9 6
Broken Hill Prop'r	N.S Wales	Silver	384,00	8 0	0	Sept., 1895	2 0 0	2 2 6
Mt. Morgan Gold	Q 'nsland	Gold	875,000	17 6	6 0	" "	2 18 9	3 1 3
INDIANS:								
Champion Reef	India	Gold	200,00	1 0 0	4 0	" "	4 12 6	4 15 0
Mysore	"	"	248,3 4	1 0 0	2 6	June, "	3 1 3	3 3 9
Nundydroog	"	"	200,00	1 0 0	1 6	July, "	1 18 9	2 1 3
Ooregum	"	"	144,000	1 0 0	2 0	Aug. "	3 1 3	3 3 9
" preferred	"	"	107,0 1	1 0 0	4 0	" "	3 12 6	3 15 0
SOUTH AFRICANS:								
British S. Africa Co	So. Africa	Lands & Ex	2,0 0,000	1 0 0			8 10 0	8 12 6
City & Suburban	Transvaal	Gold	1,86 ,000	4 0 0	1 0	June, 1895	6 12 6	7 2 6
Crown Reef	"	"	2,,000	1 0 0	5 0	" "	11 7	11 12 6
De Beers Con	"	Diamonds	3,94 ,935	5 0 0	12 6	July, "	31 7 6	31 10 0
Durban-Roodepoort	"	Gold	125,000	0 1	3 0	Sept., "	8 5 0	8 10 0
Ferreira	"	"	45,000	1 0 0	3 0	" "	20 0 0	20 10 0
Geldenhuis Estate	"	"	87,500	1 0 0	6 0	" "	6 7 6	6 12 6
Jagersfontein	"	Dismonds	1,000,000	5 0 0	10 0	" 1894	10 17 6	11 0 0
Langlaagte Estate	"	Gold	400,000	1 0 0	5 0	June, 1895	6 17 6	7 0 0
New Primrose	"	"	278,75	1 0 0	5 0	" "	7 11 3	7 13 9
Robinson	"	"	2 0,000	5 0 0	6 0	July, "	10 15 0	11 0 0
Simmer & Jack	"	"	250,000	1 0 0	2 0	Aug. "	23 15 0	24 5 0

PARIS. Week ending Sept. 27.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	100.00	2,000.00	2,0 0.00
" " Firminy	"	"	3,000,000	500	85.00	1,50 .00	1,6 0.00
" " Fives-Lille	"	"	12,000,000	5 0	35.00	68 .00	125.00
" " la Marine	"	"	30,000,000	500	30.00	855 00	835.0
" " Longwy	"	"		500	35.00	630.00	66 .00
" " l'Horme	"	"		500		22.00	22.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	40.00	2 8 75	2 .00
Anzin	France	Coal				200.00	4,2 2.50
Boleo	Lower Cal	Copper		500			1,3 0.00
Bruay	France	Coal	3,0 0,000	400	600.00	17,50 .00	17,965.00
Callao	Venezuela	Gold	3,,200,000	125		13.50	16.00
Cape Copper	S. Africa	Copper		50	1.50	72.50	7 .12
Champ d'Or	"	Gold		25		85.00	87.50
Courrieres	France	Coal	6 0,000	300	150.00	4,3 3.75	4,20 .00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	774.87	892.50
Dombrowa	Russia	Coal		500		674.50	6 0.00
Dourges	France	"		1,000	225.00	6,495.00	7,0 0.00
Dynamite Centrale	"	Explosives		500	25.00	659.00	67 .00
Epinac	"	Coal		2 500		600.00	605.00
Huanchaca	Bolivia	Silver		125	5.00	122.0	107.50
Jerez-Las Veiras	Spain	Copper				6.75	6.75
Lebao	Tonquin	Coal		500		400.00	350.00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	168.75	178.75
Laurium	Greece	Zinc & lead	16,3 0,000	500	40.00	59 .00	59 .00
Malfidano	Italy	Zinc	12,500,000	500	52.50	925.00	940.00
Metaux, Cie. Fran. de	France	Metal d'lers	25,000,000	500	37.50	35 .00	345.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	775. 0	785.00
Nickel	N. Caledonia	Nickel	12,720,000	500	30.00	150.00	150.00
Penarroya	Spain	Coal, etc		500	32.50	1,200. 0	1,24 .00
Pontgibaud	France	Lead, etc				380.00	380.00
Rio Tinto	Spain	Copper	81,250,000	250	8.00	452.50	458.75
Robinson	S. Africa	Gold		125	12.5	283.75	288.75
Saint Elie	Fr. Guiana	"	4,000,000	25		30.00	26.25
Salines de l'Est	France	Salt		500	27.00	325. 0	320.00
Soufres Roumaines	Italy	Sulphur				215.00	210.00
Tharsis	Spain	Copper		50	6.2	128.00	125.0
Vicogne-Noeux	France	Coal				17,3 5.00	17,350.00
Vieille Montagne	Belgium	Zinc	9,000,000	80	30.00	460 5	465.00

MEXICO. Week ending Oct. 4.

NAME OF COMPANY.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Amistad y Concordia	Hidalgo	9,600	$3.58		$40	$ 5
Angustias	Guanajuato	2,400	0.00		1,300	1,280
Arevalo	Hidalgo		10.00		400	400
Asturiana y Anexas	Zacatecas	2,500	10.00		400	4 0
Bartolome de Medina	Hidalgo	2,0 0	3.00		320	320
Carmen	"	1,170	18.81		900	9 0
Castellana	Tepic	2,448	3 0		150	150
Cerro Colorado	Chihuahua	15,0 0		$1.00	15	15
Cinco Senores	Guanajuato	2,000	30.00		1,450	1,400
Concepcion y Anexas	S. Luis Potosi	2,00			325	320
El Oro	Guanajuato	500			120	120
do. pref	"	2,000	2.00		120	120
Guadalupe	"	10,00	5.00		250	255
Huautla Sta. Ana	Morelos	4,000	1.50		100	100
Luz de Berda	Michoacan	3,000		0.50	30	30
do. Free stock	"	1,000			30	30
Luz de Maravillas	Hidalgo	1,100			385	385
Pabellon	"	1,000	27 89		200	200
Purisima de los Com.	Zacatecas	2,4 0			70	50
Real del Monte	Hidalgo	2,554	20.00		1,500	1,300
Rosario y Anexas	Durango	4,000			130	125
do. pref	"	2,400			90	90
San Francisco	Hidalgo	2,0 0	6.00		515	520
S. Ped. Chalchihuites	"	1,000	2.00		200	200
San Rafael y An	"	1,200	20.00		1,950	2,000
do. free stock	"	1,200	20.00		900	900
Sta. Elena Almoloya	"	1,280		0.50	10	10
Sta. Gertr. y Anexas	"	28 00	1.50		50	50
do. free stock	"	9,600	0.87		16	10
Sta. Maria de la Paz	S. Luis Potosi	2,400			610	650
Soledad	Hidalgo	960	30.00		940	950
Sorpreso	"	960	5.00		600	605
Trinidad	Guanajuato	2,0 0	8.00		265	270
Tlauzingo	Puebla	2,400			40	45
Union	Hidalgo	2,000	7.00		605	610
Zaragoza	Hidalgo	1,100			30	50
Zomelahuacan (gold)	Vera Cruz	5,000			100	100
Zona Min. de Pozos	Guanajuato	2,400		1.50	120	100

NOTE.—In most Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Prices are in Mexican dollars.

DIVIDEND-PAYING MINES.

	Name and Location of Company.	Capital Stock.	Shares. No.	Par val	Assessments Total Levied	Assessments Date and amount of last.	Dividends Total paid.	Dividends Date & amount of last.
1	Adams, s. L.	Colo.	$1,500,000	150,000	$10	*	....	....
2	Alaska-Treadwell, g.	Alaska	5,000,000	200,000	25	*	....	....
3	Alice, s.	Mont.	10,000,000	400,000	25	*	....	....
4	Amador, g.	Cal.	1,250,000	250,000	*	*	....	....
5	American, g	Colo.	3,000,000	300,000	10	*	....	....
6	American Belle, s. & c.	Colo.	2,000,000	400,000	5	*	....	....
7	Americ'n & Nettie, o. &	Colo.	....	300,000	....	....	....	....
8	Atlantic, c.	Mich.	1,000,000	40,000	25	280,000	April 1875	$1.00
9	Arrevie, g.	Colo.	1,000,000	1,000,000	1	*	....	....
10	Aspen Mg. & S., s. L.	Colo.	2,000,000	200,000	10	....	....	....
11	Aurora, L.	Mich.	2,500,000	100,000	25	....	....	....
12	Bad er, s	Ont.	250,000	50,000	5	....	....	....
13	Bald Butte	Mont	280,000	280,000	1	....	....	....
14	Bangkok-C. Bell, c. s. L.	Colo.	600,000	600,000	1	....	....	....
15	Bates Hunter, s. g.	Colo.	1,000,000	1,000,000	1	....	....	....
16	Belden, F. E., m.	N. H.	500,000	100,000	5	*	....	....
17	Belle Isle, s.	Nev.	10,000,000	100,000	100	230,271	Sept 1893	.10
18	Belcher, s. &	Nev.	10,400,000	104,000	100	3,262,900	Nov. 1893	.20
19	Bellevue, Idaho, s. L.	Idaho	1,250,000	125,000	10	120,000	Dec.. 1889	.25
20	Best Friend	Colo.	1,000,000	1,000,000	1	*	....	....
21	Bi-Metallic, s. &	Mont.	5,000,000	200,000	25	....	....	....
22	Bodie Con., g. L.	Cal.	10,000,000	100,000	100	714,990	July 1893	.15
23	Boston & Mont., s.	Mont.	2,500,000	250,000	10	*	....	....
24	Boston & Mont., c. s.	Mont.	3,7 0 00	120,000	25	*	....	....
25	Brotherton, L.	Mich	2,0 0,000	80,000	25	*	....	....
26	Bulwer, G.	Cal.	10,000,000	100,000	10	155,000	July 1893	.15
27	Bunker Hill & S. s. L.	Idaho	3,000,000	300,000	10	*	....	....
28	Caledonia, g.	Dak.	10 000,000	100,0 0	100	905,000	May. 1885	.15
29	Calumet & Hecla c.,	Mich.	4,500,000	100,000	25	1,200,000	....	....
30	Center'l-Eureka, s. L.	Utah.	1,500,000	30,000	50	30,000	Mar. 1888	1.00
31	Central, c.	Mich.	500,000	20,000	25	100,000	Oct.. 1861	.65
32	Champion, g	Cali	340,000	34,000	10	150,000	....	....
33	Chrysolite, s. L.	Colo.	10,000,000	200,000	50	*	....	....
34	Cœur D'Alene, s. L.	Idaho	5,000,000	500,000	10	....	....	....
35	Colorado Central, s. L.	Colo.	2,700,000	275,000	10	*	....	....
36	Commonwealth, s.	Nev.	10,000,000	100,000	100	200,000	Nov. 1893	.10
37	Confidence, s. L.	Nev.	2,496,000	24,960	100	1,589,550	Aug. 1892	.50
38	Con. Cal. & Va., s. &	Nev.	21,600,000	216,000	100	216,000	Dec. 1892	.50
39	Contention, s.	Aris.	12,500,000	250,000	50	*	....	....
40	Cook's Peak, s.	N. M.	2,000,000	200,000	10	....	....	....
41	Cop Queen Con., c.	Aris.	2,000,000	200,000	10	....	....	....
42	Coptis	Nev.	10,000,000	100,000	100	....	....	....
43	Cortes, *	Nev.	1,500,000	300,000	5	*	....	....
44	Crescent, s. L., &	Utah.	15,000,000	600,000	25	60,000	Oct 892	.10
45	Crown Point, g. &	Nev.	10,000,000	100,000	100	2,750,000	June 893	.25
46	Daly, s. L.	Utah.	3,000,000	150,000	20	*	....	....
47	†Deadwood-Terra, g.	Dak.	5,000,000	200,000	25	*	....	....
48	DeLamar, g &	Idaho	2,000,000	400,000	5	....	....	....
49	Derbec B. Grav., g.	Cal.	10,000,000	100,000	100	100,000	Sept. 1892	.10
50	Dexter, g. &	Nev.	1,000,000	100,000	10	....	....	....
51	Elkhorn, s.	Mont.	1,000,000	200,000	5	*	....	....
52	Elkton	Colo.	5 0,000	500,000	1	*	....	....
53	Enterprise, s.	Colo.	2,500,000	500,000	5	*	....	....
54	Eureka C m., s. L. &	Nev.	1,000,000	80,000	20	550,000	June 1889	.50
55	Eureka Hill, g. s. L.	Utah.	1,000,000	10,000	10	....	....	....
56	Evening Star, s. L.	Colo.	400,000	80,000	10	....	....	....
57	Father de Smet, c.	Dak.	10,000,000	100,000	100	200,000	Nov.. 1878	1.00
58	Franklin, c.	Mich.	1,000,000	40,000	25	340,000	June 1867	2.50
59	Glengarry	Mont.	1,000,000	100,000	10	....	....	....
60	Gold & Globe, g.	Colo.	750,000	750,000	1	....	....	....
61	Gould & Curry, s. &	Nev.	10,800,000	108,0 0	100	4,688,400	Oct.. 1893	.10
62	Grand Prize, s.	Mont.	10,000,000	100,000	100	785,000	Jan.. 1890	.30
63	Granite Mountain, s.	Mont.	10,000,000	400,000	25	....	....	....
64	Great Western, L. &	Cal.	5,000,000	50,000	100	50,526	1889	.15
65	Hale & Norcross, g. &	Nev.	11,200,000	112,000	100	5,646,000	June 1893	.50
66	Hecla Con., s. & L. C.	Mont	1,500,000	30,000	50	....	....	....
67	Hel'a Mg. & Red, s. L. &	Mont.	3,515,000	663,000	5	*	....	....
68	Helena & Frisco, s. L.	Idaho	2,500,000	500,000	5	....	....	....
69	Helena & Victor	Mont.	1,000,000	200,000	5	....	....	....
70	¶ Holmes, s.	Nev.	10,000,000	100,000	100	345,000	Mar. 1890	.25
71	Homestake, g.	Dak.	12,500,000	125,000	100	200,000	July. 1878	1.00
72	Hope, s.	Mont.	1,000,000	100,000	10	*	....	....
73	Horn-Silver, s. L.	Utah.	10,000,000	400,000	25	*	....	....
74	Idaho, s.	Cal.	3,100,000	3,100	100	....	....	....
75	Illinois, s.	N. M.	100,000	100,000	1	*	....	....
76	Iron Mountain, s.	Mont.	5,000,000	500,000	10	*	....	....
77	Iron-Silver, s. L.	Colo.	10,000,000	500,000	20	*	....	....
78	Jackson, g. s.	Nev.	5,000,000	50,000	100	247,500	Mar.. 1893	.20
79	Kearsarge, c.	Mich.	1,000,000	40,000	25	190,000	Oct.. 1887	1.00
80	Kennedy	Cal	10,000,000	100,000	100	....	....	....
81	Lake Superior, L.	Mich.	2,100,000	84,000	....	....	....	....
82	Leadville Con., s. L.	Colo.	5,000,000	500,000	10	*	....	....
83	Lexington, g. &	Mont.	4,000,000	40,000	100	*	....	....
84	Little Chief, s. L.	Colo.	10,000,000	200,000	50	*	....	....
85	Maid of Erin	Colo.	3,000,000	600,000	5	....	....	....
86	Mammoth, s. L. c.	Utah	10,000,000	400,000	25	110,000	1892	.25
87	Maxfield	Utah.	3,000,000	300,000	10	....	....	....
88	Mayflower, g. gravel	Cal.	1,200,000	60,000	20	....	....	....
89	Minas Prietas, g. & s.	Mex.	1,000,000	100,000	10	....	....	....
90	Minnesota, c.	Mich.	1,000,000	40,000	25	420,000	April 1886	1.00
91	Minnesota Iron, L.	Minn.	6,500,000	165,000	100	....	....	....
92	Mollie Gibson, s.	Colo.	5 000,000	1,000,000	5	19 500	Jan.. 1891	.01
93	Monitor, G.	S. Dak	2,500,000	250,000	10	*	....	....
94	Mono, s.	Cal.	5,000,000	50,000	100	797,500	Feb.. 1893	.25
95	Montana, Lt., g. & s.	Mont.	3,300,000	660,000	5	*	....	....
96	Moose	Colo.	600,000	600,000	1	....	....	....
97	Morning Star, s. L.	Colo.	1,000,000	100,000	10	....	....	....
98	Morning Star Drift, g	Cal.	2,400,000	2,400	100	....	....	....
99	Mouiton, s. &	Mont.	2,000,000	400,000	5	*	....	....
100	Mt. Diablo, s.	Nev.	5,000,000	50,000	100	187,500	June 1880	2.00
101	Mt. Rosa, g	Colo.	1,000,000	1,000,000	1	*	....	....
102	Napa, g.	Cal.	700,000	100,000	7	*	....	....
103	Navajo, g. & s.	Nev.	10,000,000	100,000	100	538,714	Sept. 1893	.10
104	New Guston, s.	Colo.	550,000	110,000	5	*	....	....
105	North Banner Con.	Cal.	1,000,000	100,000	10	....	....	....
106	North Commonw'th	Nev.	10,000,000	100,000	10	90,000	Jan.. 1893	.10
107	N. Hoover Hill, g. &	N. C.	800,000	120,000	2-5	*	....	....
108	North Belle Isle, s.	Nev.	10,000,000	100,000	100	513,075	April 1893	.10
109	North Star, g.	Cal.	1,000,000	100,000	10	20,000	1885	.02
110	Nugget, c.	....	1,000,000	1,000,000	1	*	....	....
111	Omaha Coal., g.	Cal.	2,400,000	24,000	100	....	....	....
112	Ontario, s. L.	Utah	15,000,000	150,000	100	....	....	....
113	Ophir, g. &	Nev.	10,000,000	100,000	100	4,291,040	July 1893	.25
114	Osceola, c.	Mich.	1,250,000	50,000	25	480,000	April 1876	1.60
115	Pacific Coast, s.	Cal.	2,000,000	20,000	100	....	....	....
116	Parrot, c.	Mont.	2,310,000	231,000	10	....	....	....
117	Pat, g	Utah.	10,000,000	10,000	100	....	....	....
118	Pharmacist, g.	Cal.	1,200,000	1,200,000	1	....	....	....
119	Plumas Eureka, g.	Colo.	1 406,250	140,600	50	....	....	....
120	Plymouth Con., g.	Cal.	5,000,000	100,000	50	*	....	....
121	Poorman, g. &	Idaho	375,000	300,000	125	*	....	....
122	Portland, g.	Colo.	3,000,000	3,000,000	1	*	....	....
123	Quicksilver, pref., g.	Cal.	4,300,000	43,000	100	....	....	....
124	" com., g.	Cal.	5,700,000	57,000	100	....	....	....
125	Quincy, c.	Mich.	1,250,000	50,000	25	200,000	Dec.. 1862	....
126	Red Cloud	Idaho	1,000,000	200,000	5	....	....	....
127	Retriever, L.	S. Dak	1,250,000	250,000	5	....	....	....
128	Rialto, c.	Colo.	300,000	300,000	1	*	....	....
129	Richmond, s. L.	Nev.	1,350,000	54,000	25	*	....	....
130	Rico-Aspen	Colo.	5,000,000	1,000,000	5	....	....	....
131	Ridge, c.	Mich.	1,250,000	50,000	25	219,939	Mar. 1886	50
132	Robinson Con., s. L.	Colo.	10,000,000	200,000	50	*	....	....
133	Savage, s.	Nev.	11,200,000	112,000	100	6,966,000	June 1893	.25
134	Sierra Buttes, g.	Cal.	2,225,000	122,500	10	....	....	....
135	Sierra Nevada, s. &	Nev.	10,000,000	100,000	100	6,321,910	Aug. 1893	.25
136	Silver Cord, s. L. &	Colo.	5,500,000	500,000	10	....	....	....
137	Silver King, s.	Utah.	10,000,000	100,000	100	97,479	Aug.. 1892	.25
138	Silver Mg. of L. V., s. L.	N. M.	500,000	500,000	1	....	....	....
139	Small Hopes Con., s.	Colo.	5,000,000	250,000	20	*	....	....
140	Standard, g. s.	Cal.	10,000,000	100,000	100	100,000	June 1890	.50
141	Swansea, g. s.	Colo.	600,000	60,000	10	....	....	....
142	Tamarack, c.	Mich.	1,250,000	50,000	25	530,000	April 1885	3.00
143	Trinity River Hydr., g	Colo.	500,000	500,000	1	*	....	....
144	Union	Colo.	1,250,000	1,250,000	1	....	....	....
145	United Verde, c.	Aris.	3,000,000	300,000	10	*	....	....
146	Victor, g	Colo.	1,000,000	200,000	5	....	....	....
147	Victor L. & M. Co., g.	Colo.	600,000	600,000	1	....	....	....
148	Ward Con., s.	Colo.	2,000,000	200,000	1	....	....	....
149	W. Y. O. D	Cal.	60,000	30,000	2	22,500	May.. 1891	.10
150	Yankee Girl, t	Colo.	1,300,000	260,000	5	....	....	....
151	Yellow Jacket, g.	Nev.	12,000,000	120,000	100	....	July. 1893	.25

	Name and Location of Company.	Capital Stock.	Shares. No.	Par val	Assessments Total levied.	Assessments Date and amount of last.
1	Ajax, g. s. L.	Utah.	$3,000,000	300,000	$10	$15,000	Mar.. 1895	$20
2	Alliance, s. &	Utah.	10,000,000	100,000	1	120,000	Feb.. 1891	.10
3	Alloues, C.	Mich.	2,000,000	80,000	25	1,434,987	Oct.. 1891	.10
4	Alpha Con., g. &	Nev.	3,000,000	30,000	100	209.000	Sept. 1892	.10
5	Alta, s.	Nev.	10,080,000	100,800	100	3,369,880	Jan. 1892	.05
6	American Flag, s.	Colo.	1,250,000	125,000	1	300,000	June 1887	....
7	Anchor, s. L. &	Utah.	3,000,000	150,000	5	560,000	July. 1893	.15
8	Barcelona, s.	Nev.	5,000,000	200,000	5	*	....	....
9	Belmont, g. &	Cal.	500,000	500,000	100	*	....	....
10	Belmont, s.	Nev.	5,000,000	50,000	100	735,000	April 1886	.10
11	Best & Belcher, s. &	Nev.	10,080,000	100,800	10	2,405,275	Aug.. 1892	.25
12	Black Oak, g.	Cal.	3,000,000	300,000	100	*	....	....
13	Brownlow, g.	Colo.	250,000	250,000	5	....	....	....
14	Brunswick, g.	Cal.	2,000,000	400,000	2	....	....	....
15	Bullion, s. &	Nev.	10,000,000	100,000	100	2,890,000	Aug. 1892	.25
16	Butte & Boston, c. s.	Mont.	5,000,000	200,000	10	....	....	....
17	Butte Queen, G	Cal..	1,000,000	100,000	1	6,000	Jan.. 1892	....
18	Calaveras, s.	Cal..	500,000	500,000	5	....	....	....
19	Calaveras Con., g.	Cal..	800,000	160,000	10	....	....	....
20	California, s.	Colo.	1,000,000	100,000	5	9,000	Mar.. 1892	....
21	California Con. L. Q.	Cal..	2,250,000	450,000	10	....	....	....
22	Challenge Con., g. s.	Nev.	5,000,000	50,000	10	....	....	....
23	Choliar, s. &	Nev.	11,200,000	112,000	....	2,212 000	May.. 1893	.25
24	Colchis, s. &	N. M.	500,000	150,000	5	....	....	....
25	Colorado, s.	Colo.	1,625,000	325,001	5	....	....	....
26	Comstock, g.	Utah.	1,250,000	250,000	100	....	....	....
27	Comstock Tun.	Nev.	10,000,000	100,000	100	35,000	Mar 1887	.10
28	Con. Imperial, g. s	Nev.	5,000,000	50,000	50	2,062,500	Jan.. 1892	.25
29	Con. New York, s. &	Nev.	5,000,000	100,000	100	110,000	Mar.. 1892	.10
30	Con. Pacific, c.	Cal.	6,000,000	60,000	100	198,000	June 1890	.10
31	Crescent, s. L.	Colo.	3,000,000	300,000	10	*	....	....
32	Crocker, s.	Aris.	10,000,000	100,000	100	165,000	Aug. 1892	.05
33	Crowell, g.	N. C.	500,000	500,000	1	....	....	....
34	Dahlonega, g.	Ga.	250,000	250,000	10	*	....	....
35	Decatur, s	Colo.	1,500,000	300,000	....	....	....	....
36	Denver City S.	Colo.	5,000,000	500,000	11	*	....	....
37	Denver Gold, g.	Colo.	300,000	60,000	5	....	....	....
38	Dickens-Custer, s.	Idaho	2,100,000	420,000	5	....	....	....
39	Durango, g.	Colo.	500,000	500,000	1	*	....	....
40	El Dorado, g.	Cal.	1,000,000	250,000	4	*	....	....
41	Emma, s	Utah.	625,000	500,000	125	....	....	....
42	Emmons, s. L.	Colo.	2,000,000	2 000,000	1	....	....	....
43	Empire, s.	Utah.	10,000,000	100,000	100	....	....	....
44	Eureka Tunnel, s. L.	Nev.	10,000,000	100,000	100	*	....	....
45	Exchequer, s. &	Nev.	10,000,000	100,000	100	940,000	Jan.. 1892	.25
46	Found Treasure, g. &	Nev.	10,000,000	100,000	100	180,500	Jan.. 1892	.50
47	Gogebic I. Syn., L.	Wis.	8,000,000	200,000	25	....	....	....
48	Gold Cup, s.	Colo.	500,000	500,000	1	*	....	....
49	Golden Era, s.	Mont.	1,000,000	200,000	10	*	....	....
50	Golden Flat, g.	Cal.	1,000,000	100,000	10	5,000	Mar.. 1892	.05
51	Gold Rock, g.	Cal.	1,000,000	500,000	2	....	....	....
52	Golden FeatherCh., g	Cal..	900,000	180,000	5	....	....	....
53	Goodyear G. s. L.	Mont.	1,000,000	200,000	5	13,000	Feb.. 1892	.01
54	Grand Duke, s.	Colo.	800,000	80,000	10	....	....	....
55	Gregory Con., g.	Mont.	3,000,000	300,000	10	....	....	....
56	Hall Mt. M. Co., g.	Cal.	1,000,000	100,000	5	....	....	....
57	Hartery Con., g.	Cal.	1,000,000	100,000	10	22,000	Oct.. 1891	.05
58	Hartshorn, g. s. L.	S. Dak	1,250,000	250,000	5	8 750	Sept. 1891	.00½
59	Head Cent. & Tr., s. &	Aris.	10,000,000	100,000	100	16,981	Mar.. 1892	.03
60	Hector, g.	Cal.	1,500,000	300,000	5	45,000	Jan.. 1889	.15
61	Himalaya, g. & L.	Utah.	1,800,000	80,000	10	12,800	Oct.. 1892	.00½
62	Hollywood	Cal.	200,000	100,000	2	....	....	....
63	Huron, c.	Mich.	1,000,000	40,000	25	280,000	May.. 1887	1.00
64	Idaho, g. &	Idaho	1,250,000	250,000	5	....	....	....
65	Ingalls, g	Colo.	100,000	20,000	5	....	....	....
66	Ironton, L.	Wis.	1,000,000	40,000	25	....	....	....
67	Iroquois, c.	Mich.	1,250,000	50,000	25	....	....	....
68	Kentuck Con.	Nev.	10,500,000	105,000	100	57,750	July 1892	.10
69	Julia Con., g. & s.	Nev.	11,000,000	110,000	100	1,463,000	Jan.. 1889	.10
70	Justice, g. s. c.	Colo.	500,000	500,000	....	....	....	....
71	Lacrosse, g.	Colo.	1,000,000	100,000	10	*	....	....
72	Little Josephine, s.	Colo.	250,000	50,000	5	....	....	....
73	Little Pittsburg, g. &	Utah.	4,000,000	400,000	10	4,000	Mar.. 1892	....
74	Lone Star Cons., g.	Cal.	500,000	500,000	1	10,000	April 1892	.02½
75	Lookelelee, g. & L.	Colo.	750,000	50,000	1	4,500	Feb. 1892	.01½
76	Mammoth Gold, g.	Aris.	2,500,000	500,000	5	*	....	....
77	Mayflower Gravel, g	Cal..	1,000,000	100,000	10	....	....	....
78	Mexican, g. &	Nev.	10,000,000	100,000	100	2,917,560	Oct.. 1892	.50
79	Michigan, g s	Mich.	2,500,000	100,000	25	40,000	Mar. 1892	....
80	Mike & Starr, s. c.	Colo.	1,000,000	200,000	5	*	....	....
81	Miscaukee, c.	Mont.	500,000	500,000	1	....	....	....
82	Modoc Chief, L. s. &	Idaho	1,000,000	200,000	5	5,000	Jan.. 1892	.00½
83	Monitor, g.	Colo.	100,000	100,000	1	12,500	May. 1891	.01
84	Montreal, g. s. L.	Utah.	750,000	150,000	5	4,500	Feb.. 1892	.00½
85	Mutual Mg. & Sm.	W'sh.	100,000	100,000	1	*	....	....
86	Neath, G.	Colo.	1,000,000	100,000	10	....	....	....
87	Nanson	Cal.	50,000	10,000	5	....	....	....
88	Nevada Queen, s.	Nev.	10,000,000	100,000	100	200,000	Oct.. 13	.25
89	New Gold Hill	N. C.	1,750,000	350,000	5	....	....	....
90	New Pittsburg, s. L.	Colo.	2,000,000	200,000	10	*	....	....
91	North Standard, g.	Cal.	10,000,000	100,000	100	20,000	Nov	....
92	Occidental Con., g. &	Cal.	10,000,000	100,000	100	245,000	April 1892	.25
93	Oneida Chief, g.	Cal..	500,000	125,000	10	....	....	....
94	Oriental & Miller, s.	Nev.	10,000,000	400,000	100	....	....	....
95	Original Keystone, s.	Nev.	10,000,000	100,000	100	250 000	Mar.. 1892	.10
96	Osceola, g.	Nev.	5,000,000	500,000	10	*	....	....
97	Overman, g. &	Nev.	11,520,000	115,200	100	4,001 80	May. 1892	.10
98	Pay Rock, s	Colo.	1,000,000	200,000	5	....	....	....
99	Peer, s.	Aris.	10,000,000	100,000	100	190 000	Feb.. 1892	.10
100	Peerless, s.	Aris.	10,000,000	100,000	100	405 000	Oct.. 1891	.15
101	Pennsylva'a Cons., g	Cal..	5,150,000	515,000	10	86,050	Feb.. 1892	.10
102	Phœnix, g.	Aris.	500,000	500,000	1	....	....	....
103	Phœnix Lead, s. L.	Colo.	100,000	100,000	1	....	....	....
104	Pilgrim, g	Cal.	600,000	300,000	2	....	....	....
105	Pioche M. & R., s. & L.	Utah.	20,000,000	200,000	10	....	....	....
106	Poorman, Ltd., s. L.	Idaho	250,000	50,000	5	....	....	....
107	Potosi, s.	Nev.	11,200,000	112,00	100	1,573,000	Mar.. 1890	.50
108	Proustite, s.	Idaho	250,000	250,000	1	*	....	....
109	Puritan, s. &	Colo.	1,500,000	150,000	10	*	....	....
110	Quincy, c	Colo.	5,000,000	300,000	10	....	....	....
111	Rainbow, g.	S. Dak	1,250,000	250,000	5	1,250	July. 1892	.00½
112	Rappahannock, g. s.	Va.	250,000	250,000	1	*	....	....
113	Red Mountain, s.	Colo.	300,000	60,000	5	....	....	....
114	Ropes, g. s.	Mich.	2,000,000	80,000	25	167,200	Feb.	.50
115	Ruby & Dun., s. L. &	Nev.	25,300	506	50	....	....	....
116	Russell, g.	L. C.	1,500,000	300,000	5	....	....	....
117	Sampson, g. s. L.	Utah.	10,000,000	100,000	100	288,151	July. 1888	1.00
118	Silver Age, s. L. &	Colo.	2,000,000	200,000	10	*	....	....
119	Silver Bell, s.	Aris.	850,000	170,000	5	....	....	....
120	Silver King, s.	Cal	2,000,000	400,000	5	....	....	....
121	Silver Queen, c.	Aris.	5,000,000	200,000	25	*	....	....
122	Silverton, s	Colo.	300,000	60,000	5	....	....	....
123	Sinkapoo, g. L.	Cal.	2,000,000	200,000	10	15,000	May.. 1892	.01½
124	South Bulwer, G.	Cal..	10,000,000	100,000	100	100,000	May 1881	.25
125	South Hite, g.	Cal..	10,000,000	100,000	100	195,000	Jan.. 1883	.05
126	Stanislaus, g.	Cal..	2,000,000	200,000	10	....	....	....
127	St. Kevin, g. &	Colo.	100,000	100,000	1	*	....	....
128	St. Louis & Mex., s.	Mex.	000,000	500,000	10	*	....	....
129	St. Louis St. Elmo,	Colo.	1,000,000	200,000	5	....	....	....
130	St. L. & Sonora, g. &	Aris.	3,000,000	300,000	10	....	....	....
131	Stemwinder, L. s.	Idaho	500,000	500,000	1	....	....	....
132	Sunday Lake, I.	Mich.	250,000	50,000	25	....	....	....
133	Sullivan Con., g.	Dak.	400,000	200,000	3	*	....	....
134	Sylvanite, s.	Colo.	5,000,000	500,000	10	*	....	....
135	Taylor-Plumas, g.	Cal..	425,000	65,000	5	3,575	Mar.. 1892	.01½
136	Telegraph, g. s.	Cal..	325,000	65,000	5	3,575	Mar. 1892	.01½
137	Telegraph, g. s.	Mex.	100,000	100,000	1	70,000	Feb.. 1892	.10
138	Teresa, g. s.	Cal.	1,000,000	200,000	5	10,000	Feb.. 1888	.10
139	Tioga Con., g.	Nev.	10,000,000	100,000	10	295,000	May. 1888	.25
140	Tornado Con., g. s.	Nev.	100,000	100,000	1	*	....	....
141	Tuscarora, g. s.	Nev.	10,000,000	500,000	20	385,070	Jan.. 1892	.25
142	Union Con., g. s.	Nev.	10,000,000	100,000	100	370,000	June 1892	.25
143	Utah, s.	Nev.	10,000,000	100,000	100	245,000	Aug.. 1890	.25
144	Ute & Ulay, s. L.	Colo.	1,000,000	500,000	2	1,500	Mar.. 1892	.001
145	Valley, g.	Cal.	575,000	460,000	125	....	....	....
146	Washington, c.	Mich.	1,000,000	40,000	5	....	....	....
147	West Argentine, s.	Colo.	750,000	150,000	5	....	....	....
148	West Granite Mt., s.	Mont.	500,000	100,000	5	....	....	....
149	Whale, s.	Mont.	5,000,000	500,000	10	*	....	....
150	Wood River, g.	Idaho	2,000,000	200,000	10	3,000	Aug.. 1891	.00½
151	Yuma, c. s. &	Aris	10,000,000	400,000	2	....	....	....

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. † The Deadwood previously paid $275,000 in eleven dividends and the Terra $75,000. Previous to the consolidation in August, 1834, the California had paid $31,320,000 in dividends, and the Cons. Virginia $12,330,000. ‖ Previous to the consolidation of the Copper Queen with the Atlanta, August, 1885, the Copper Queen had paid $1,350,000 in dividends. ¶ Previous to this company's acquiring Northern Belle, that mine paid $400,000 in dividends against $425,000 in assessments.